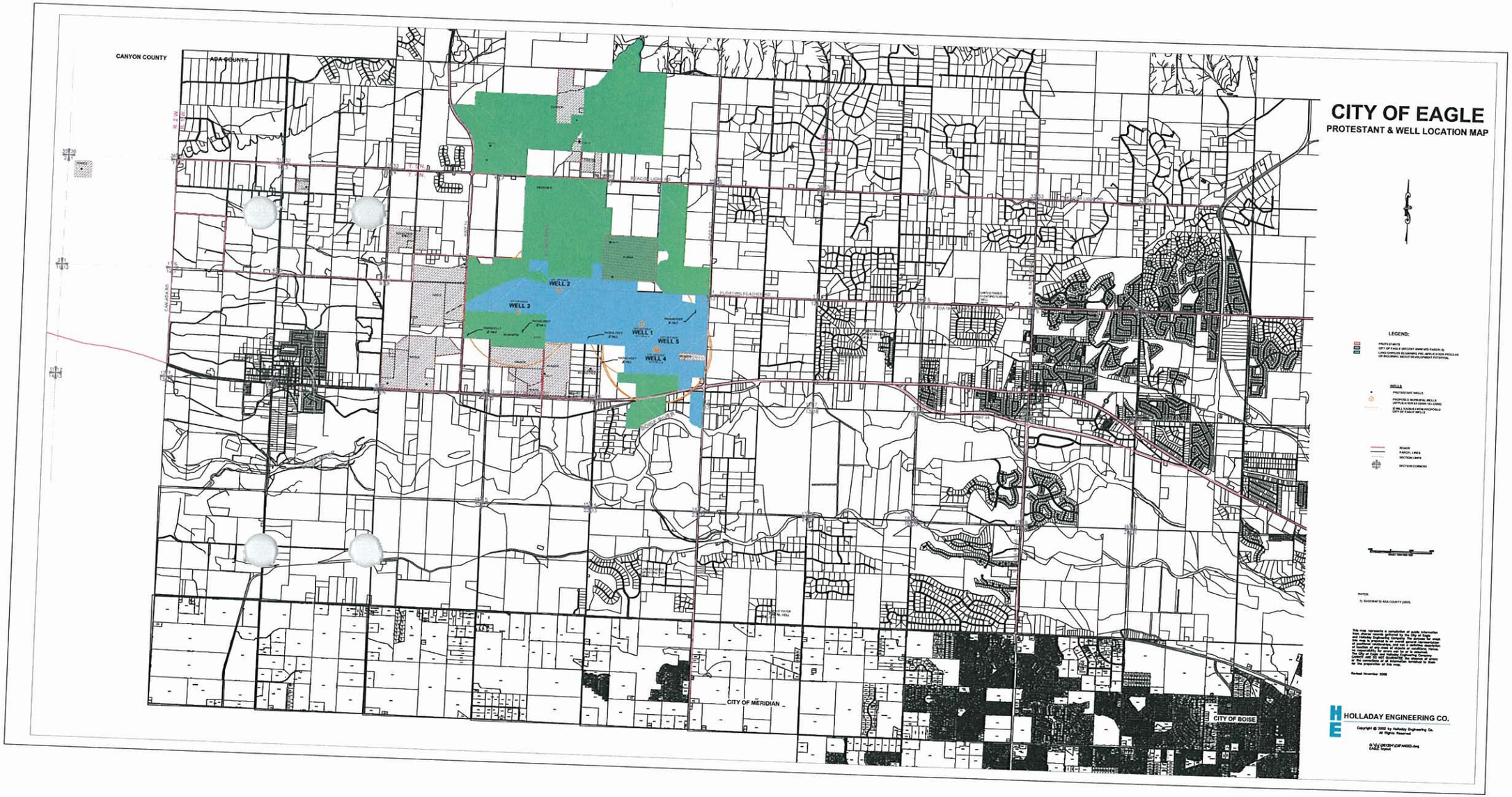
PLEASE REFER TO FILE FOLDER NO. 8

FOR THE CONTINUATION OF THIS WATER RIGHT FILE

No. 63-32089



Eagle Exhibit 9

HOLLADAY ENGINEERING CO.
ENGINEERS • CONSULTANTS
32 N. Main P.O. Box 235 Payette, ID 83661
(208) 642-3304 • Fax # (208) 642-2159

September 8, 2005

Mr. John Westra
Western Regional Office
Idaho Department of Water Resources
2375 Airport Way
Boise, ID 83705-5082

Subject: Aquifer Test Proposal and Test Well Drilling Permits for City of Eagle W.R. Applications 63-32089 and 63-32090, HECO NO. EG061204 and EG13305

Dear Mr. Westra,

The City of Eagle is requesting review and approval to conduct an aquifer test pertaining to water appropriation applications 63-32089 and 63-32090. The aquifer test will provide site specific hydrogeologic information for the Lower Treasure Valley Aquifer system and serve as a basis for further analysis. The aquifer test will also provide a field demonstration of pumping effects on ground water levels at various monitoring well locations up to a distance of 1-mile from the pump test well.

The aquifer test will consist of constructing a new test well at the site. The test well will be pumped at a rate of 1,000 gpm for approximately 7-days during the pumping phase of the test. Up to ten existing wells in the area, completed in three general aquifer zones, will be monitored for water level change. The draw-down and recovery data be analyzed to determine aquifer parameters and conditions in the area. The test data and analysis will be compiled into a final report.

Enclosed are two drilling permit applications. The first application is for construction of test well no. 1 located in the SE¼ of the NW¼, Section 11, T. 4N, R. 1W. The proposed location of test well no. 1 corresponds to the location of production well no. 1 listed in water right appropriation application 63-32089 and 63-32090. Test well no. 1 is designed as a 12-inch single-string well assembly with 80-feet of 30-slot screen, an artificial sand filter pack, and bentonite pressure

grout seal. The test well will be completed with screened intervals between approximately 400 to 550 feet. Final screen placement will be based on drilling results. Attached is a design drawing for test well no. 1.

The second drilling permit application is for a temporary well to provide drilling water for the construction of the test well no. 1. Temporary well no. 1 is designed as a 6-inch well with an open interval between approximately 35 to 50 feet and a 20 foot deep chip bentonite well seal. The well is designed to only provide temporary drilling water. The well will be drilled using a direct air rotary method. The well will be abandoned immediately following the construction of test well no. 1. The City is prepared to provide bonding for well abandonment, if requested by the Department. Riverside, Inc. has been selected as the drilling contractor for both wells. Attached is a design drawing for temporary well no. 1.

The following details the proposed aquifer test.

Aquifer Test

A seven day constant rate pump and recovery aquifer test is proposed to determine conditions the Lower Treasure Valley Aquifer system at the site. The aquifer test will consist of pumping and recovery phases to determine aquifer transmissivity and storativity valves at the pumping well and monitoring well locations. The proposed aquifer test is similar in size and duration to the United Water of Idaho Floating Feather well test performed in 1995 and has been designed to DEQ Public Water System requirements for test pumping a groundwater source supply under IDAPA 58.01.08.550.03.i.

Pumping Phase of Test

Test well no. 1 will be pumped at a constant rate of 1,000 gpm for approximately 7-days. The pumping rate will be controlled by a discharge valve and monitored using a flow rate and totalizing meters. The proposed pumping rate is equivalent to the projected peak 1-hour demand without fire flow for the proposed City of Eagle Municipal Water System Western Expansion Area at 2,000 equivalent residential customer service connections. The aquifer test pumping duration is a maximum of seven-days or until 72-hours of water level stabilization has occurred in the pumping well. The maximum water volume to be produced is 30.93 ac-ft for a 7-day period of pumping. Groundwater will be discharged to the existing canal and irrigation system on the Quarter Circle D. J. Ranch owned by Legacy Sports Development, LLC. The groundwater produced during the test will be used for farm irrigation.

Recovery Phase of Test

The recovery phase of the test will start at the completion of pumping. Water levels will be monitored in all wells for a period equal to or exceeding the pumping test duration. The water level recovery data will used to determine transmissivity and storativity valves at each well location.

Pre-Test Monitoring

All aquifer test wells will be monitored for water level fluctuations one week prior the start of the pump phase of the test. The data will be used to evaluate antecedent water level trends and will provide a basis for water level corrections due meteoric pressure changes during the aquifer test.

Water Level Monitoring

Up to ten existing wells located on the Quarter Circle D. J. Ranch will used for water level monitoring during the aquifer test. Five of the monitoring wells are artesian and completed in the deep aquifer zone below 250 feet. Three monitoring wells are non-artesian and completed in intermediate zone between 100 and 180 feet, and two monitoring wells are completed in the shallow upper aquifer zone. The radial distances of these monitoring wells range between approximately 500 and 5,100 from the pumping well. All well locations will be surveyed. Attached is an aquifer test map showing the approximate well locations.

Monitoring wells will be video inspected as needed to confirm well completion and open intervals prior to the test. Ground water levels will monitored with water level meters and pressure transducer equipment during the test. Pressure data corrections and conversions will be made to calculate water levels. Water level measurements will be collected on log-scale intervals to generate appropriate draw-down curves at each monitoring well location.

Analysis and Reporting

Water level data collected from pumping and monitoring wells during the test will be plotted as draw-down and recovery curves. The data will be analyzed using appropriate methods for aquifer conditions (confined, semi-confined, or unconfined) to determine aquifer characteristics and parameters.

The data and analysis will be compiled into a report to the City of Eagle. Scientific peer review will be conducted for the aquifer field test, analysis and report findings.

The tentatively scheduled is to start the aquifer pump test on Monday October 3, 2005. An additional three weeks is required for data analysis and report preparation.

If you have questions or concerns, please contact me at 642-3304.

Sincerely,
HOLLADAY ENGINEERING COMPANY

Chris Duncan, P.G.

cc: City of Eagle, Mayor Merrill
MSBT, Bruce Smith, City Attorney

CITY OF EAGLE

PROPOSED AQUIFER TEST MAP

LEGEND:

PROPERTY OWNERSHIP

- PROPOSED DEVELOPMENT

TEST WELL

- TEST PUMP WELL

MONITORING WELLS

- SHALLOW AQUIFER ZONE WELL
- INTERMEDIATE AQUIFER ZONE WELL
- DEEP AQUIFER ZONE WELL
- 1/2 MILE - RADIAL DISTANCE FROM TEST PUMP WELL
- 1 MILE - RADIAL DISTANCE FROM TEST PUMP WELL

- ROADS
- PARCEL LINES
- SECTION LINES
- SECTION CORNERS

1500 0 1500 3000

SCALE:1 INCH=1500 FEET

NOTE:

1) BASEMAP IS ADA AND CANYON COUNTY. (2005)

This map represents a compilation of public information from diverse records gathered by the City of Eagle and Holladay Engineering Company. The purpose for which this map is prepared is an overall general representation of positional relationships, and not a definitive description of location of any class of objects or conditions. Hence, no responsibility for errors can be or is assumed. The City of Eagle and Holladay Engineering Company CANNOT AND DO NOT GUARANTEE the absence of errors or the corrections of all information furnished to them for the preparation of this map.

SEPTEMBER 2005

HOLLADAY ENGINEERING CO.

G:\Eg\081304\PROP-AQU.dwg
EAGLE layout

Form 235-1
1/31/03

Drilling Permit No. _____
Drilling Permit I.D. Tag No. _____
Water Right Permit No. _____
Injection Permit No. _____

State of Idaho
Department of Water Resources

TEST WELL NO. 1

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): City of Eagle

2. Mailing Address: PO Box 1520

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

3. Proposed Well Location: Twp. 4N, Rge. 1W, Sec. 11, ____ 1/4 SE 1/4 NW 1/4;

Gov't Lot No. _____ County Ada Lat. ____ : ____ : ____ Long. ____ : ____ : ____

Street Address of Well Site Quarter Circle DJ Ranch, West of Linder Rd City Eagle
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision _____

4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Livestock [X] Test [ ] Other _____
Type____ Number Hd.___ (Describe)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells: _____

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 12 inch Proposed Maximum Depth 550 feet

C. Anticipated bottom hole temperature:
[X] 85 F or less (Cold Water Well)
[ ] 85 F to 212 F (Low Temp. Geo. Well)
[ ] 212 F. or more (Geothermal Well)

6. Construction Start Date: September 26, 2005

7. Anticipated Well Driller: Riverside Inc. Driller's Lic. No. _____
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: _____ Date 9-9-05

Address (if different than owner): _____

Eagle City State ID Zip Code: _____ Telephone _____

Title: Major
(Owner, Firm Representative, Other)

Prepared by Holladay Engineering Co., City Engineer

ACTION C THE DEPARTMENT OF WATER R OURCES

This Permit is _____. Date _____.

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one(1) year from the approval date for completion of the well unless an extension has been granted.

2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare, which may be required before construction of the well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.

3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.

4. Approval of this drilling permit does not authorize trespass on the land of another party.

5. This permit does not constitute other local, county, state or federal approvals, which may be required for construction of a well.

6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.

7. If a bottom hole temperature of 85 or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.

8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Department for reconsideration pursuant to Section 67-5243, Idaho Code.

10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.

SPECIFIC CONDITIONS:

_____ _____

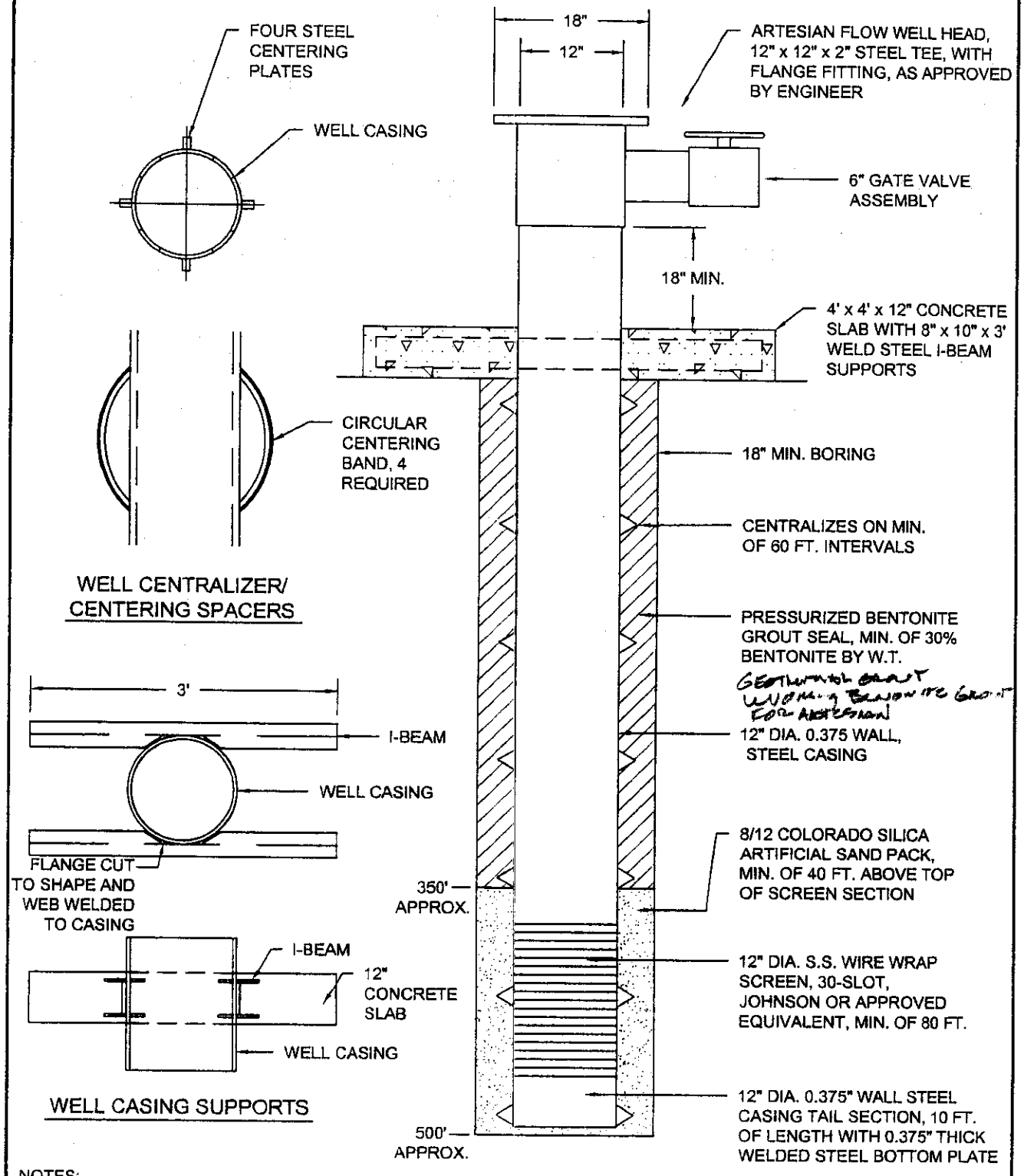
Signature of Authorized Department Representative Title

Receipt No. _____ Receipted by _____ Fee _____ Date _____

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM) AND 1.34 GREATER THAN WELL DESIGN TARGET OF 3.34 CFS (1,500 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN · P.O. BOX 238 · PAYETTE, ID 83661
(208) 642-3304 · FAX# (208) 642-2159
EMAIL: heo@holladayengineering.com

TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO.	EG 061204
DATE	5/30/06
REVISED	9/06/06
REVISED	9/08/06
DRAWN BY	JLJ
CHECKED BY	CHD

Form 235-1
1/31/03

Drilling Permit No. _____
Drilling Permit I.D. Tag No. _____
Water Right Permit No. _____
Injection Permit No. _____

State of Idaho
Department of Water Resources

TEMPORARY WELL NO. 1
DRILLING WATER WELL

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): City of Eagle

2. Mailing Address: PO Box 1520

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

3. Proposed Well Location: Twp. 4N, Rge. 1W, Sec. 11, ____ 1/4 SE 1/4 NW 1/4;

Gov't Lot No. _____ County ADA Lat. ____: ____: ____ Long. ____: ____: ____

Street Address of Well Site Quarter Circle DJ Ranch, West of Linder Rd City Eagle
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision _____

4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Livestock [ ] Test [X] Other Temp. Drilling Water Well
Type____ Number Hd.___ (Describe)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells: _____

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 6 inch Proposed Maximum Depth 50 feet

C. Anticipated bottom hole temperature:
[ ] 85 F or less (Cold Water Well) [ ] 85 F to 212 F (Low Temp. Geo. Well) [ ] 212 F. or more (Geothermal Well)

6. Construction Start Date: September 26, 2005

7. Anticipated Well Driller: Riverside Inc. Driller's Lic. No. _____
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: Donna E Yerrill Date 9-09-05

Address (if different than owner): _____

Eagle City State ID Zip Code: 83616 Telephone _____

Title: Mayor
(Owner, Firm Representative, Other)

Prepared by Holladay Engineering Co., City Engineer

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit is _____. Date _____.

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one(1) year from the approval date for completion of the well unless an extension has been granted.

2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare, which may be required before construction of the well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.

3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.

4. Approval of this drilling permit does not authorize trespass on the land of another party.

5. This permit does not constitute other local, county, state or federal approvals, which may be required for construction of a well.

6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.

7. If a bottom hole temperature of 85 or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.

8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Department for reconsideration pursuant to Section 67-5243, Idaho Code.

10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.

SPECIFIC CONDITIONS:

_____ _____

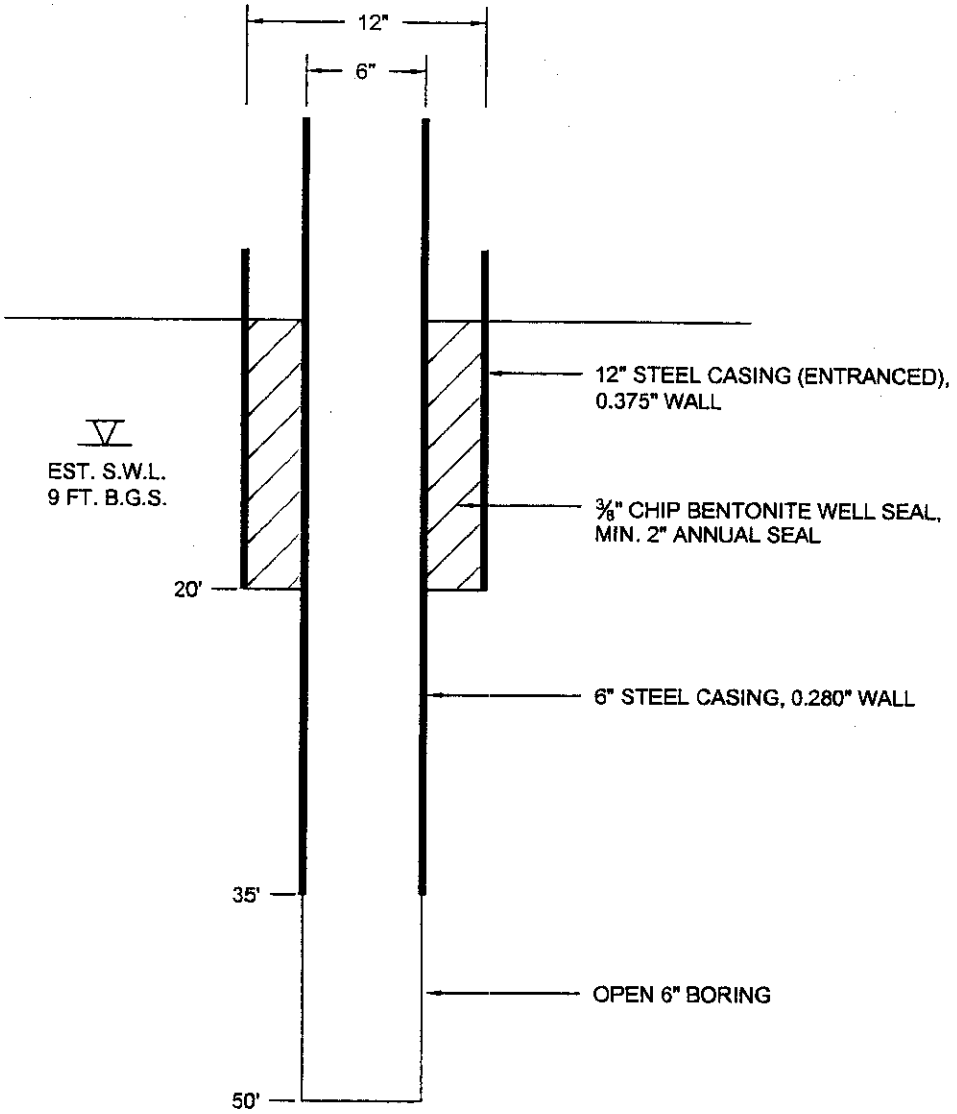
Signature of Authorized Department Representative Title

Receipt No. _____ Receipted by _____ Fee _____ Date _____

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, FINAL WELL DEPTH WILL BE BASED ON DRILLING RESULTS.

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 238 PAYETTE, ID 83661
(208) 642-3304 · FAX (208) 642-2159
EMAIL: hec@holladayengineering.com

TEMPORARY WELL NO. 1
DRILLING WATER WELL
CITY OF EAGLE, IDAHO

JOB NO.	EG 061204
DATE	9/08/06
PLOTTED	9/08/06
REVISED	
DRAWN BY	JLJ
CHECKED BY	CHD
PAGE	

G:\Eg\061204\TEXT\WELL-1.dwg

HOLLADAY ENGINEERING CO. Payette, ID 83661

26642

Idaho Dept of Water Resources

Check Number: 26642

Date: 9/9/2005 Check Amt: $200.00

Voucher	Invoice	Type	Date	Reference	Balance	Discount	Pay Amount
8663		Invoice	09/09/05	EG61204 - Permit	$200.00	$0.00	$200.00

ORIGINAL DOCUMENT PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER - SEE REVERSE SIDE FOR COMPLETE SECURITY FEATURES

HOLLADAY ENGINEERING CO.
ENGINEERS - CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
PHONE: 208-642-3304 FAX: 208-642-2159

FARMERS & MERCHANTS STATE BANK
1850 N. Whitley Dr.
Fruitland, Idaho 83619

92-151/1241

26642

NUMBER 26642

Exactly Two hundred and xx / 100 Dollars

DATE	AMOUNT
9/9/2005	$200.00

PAY TO THE ORDER OF
Idaho Dept of Water Resources
PO Box 83720
Boise ID 83720-0098

HOLLADAY ENGINEERING CO.

THIS DOCUMENT CONTAINS HEAT SENSITIVE INK. TOUCH OR PRESS HERE - RED IMAGE DISAPPEARS WITH HEAT

⑈026642⑈ ⑆124101513⑆ 570050250⑈

HOLLADAY ENGINEERING CO. Payette, ID 83661

26643

Idaho Dept of Water Resources

Check Number: 26643

Date: 9/9/2005 Check Amt: $200.00

Voucher	Invoice	Type	Date	Reference	Balance	Discount	Pay Amount
8664		Invoice	09/09/05	EG061204 - {ermit	$200.00	$0.00	$200.00

ORIGINAL DOCUMENT PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER - SEE REVERSE SIDE FOR COMPLETE SECURITY FEATURES

HOLLADAY ENGINEERING CO.
ENGINEERS - CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
PHONE: 208-642-3304 FAX: 208-642-2159

FARMERS & MERCHANTS STATE BANK
1850 N. Whitley Dr.
Fruitland, Idaho 83619

92-151/1241

26643

NUMBER 26643

Exactly Two hundred and xx / 100 Dollars

DATE	AMOUNT
9/9/2005	$200.00

PAY TO THE ORDER OF
Idaho Dept of Water Resources
PO Box 83720
Boise ID 83720-0098

HOLLADAY ENGINEERING CO.

THIS DOCUMENT CONTAINS HEAT SENSITIVE INK. TOUCH OR PRESS HERE - RED IMAGE DISAPPEARS WITH HEAT

⑈026643⑈ ⑆124101513⑆ 570050250⑈

HOLLADAY ENGINEERING CO.
ENGINEERS • CONSULTANTS
32 N. Main P.O. Box 235 Payette, ID 83661
(208) 642-3304 • Fax # (208) 642-2159

October 12, 2005

Mr. Gary Spackman
Idaho Department of Water Resources
The Idaho Water Center
322. E. Front Street
Boise, Idaho 83720-0098

Subject: Aquifer Test Proposal for City of Eagle, Applications for Water Appropriation 63-32089 and 63-32090, HECO NO. EG061204 and EG13305

Dear Mr. Spackman,

Per the Notice of Second Prehearing Conference and Order dated October 7, 2005, this is the explanation of construction specifications for proposed test wells no. 1 and 2 and the proposed aquifer test pertaining to applications for water appropriation 63-32089 and 63-32090.

On September 13, 2005, the City of Eagle (Applicant) requested review and approval to conduct a multi-well constant rate aquifer test related to water appropriation applications 63-32089 and 63-32090. The aquifer test is designed to gather site specific hydrogeologic information in the Lower Treasure Valley Aquifer system and to serve as a basis for further analysis. The aquifer test will also provide a field demonstration of pumping effects on ground water levels at various monitoring well locations at distances up to approximately 1-mile from the aquifer test pumping well. Holladay Engineering Company will conduct the aquifer test and provide engineering services for the aquifer test project.

The Applicant is proposing to construct a new test well (test well no. 1) located in the SE¼ of the NW¼, Section 11, T. 4N, R. 1W on the Quarter Circle D. J. property and owned by Legacy Sports Development, LLC. The aquifer test

requires a well completed in the representative production zone between 400 to 500 feet with a minimum production capacity of 1,000 gpm. Test well no. 1 is designed as a 12-inch diameter single string welded assembly with 80 feet of screen. Total well depth will be approximately 500 feet, pending drilling results. A shallow depth production well (test well no. 2) is also proposed to provide drilling water for construction of test well no. 1. Test well no. 2 will be located approximately 100 feet away from test well no. 1 in the same quarter-quarter location as listed above. Applications for Drilling Permit were submitted to IDWR on September 13, 2005.

The following details the proposed aquifer test and construction of test well no. 1 and no. 2.

Aquifer Test

A seven day constant rate pump and recovery aquifer test is proposed to determine site specific conditions of the Lower Treasure Valley Aquifer system in the area where new production wells are proposed under water appropriations applications 63-32089 and 63-32090. The aquifer test will consist of pumping and recovery phases to determine aquifer transmissivity and storativity values at the pumping well and monitoring well locations. The test data will be used to characterize conditions and behavior of the aquifer system in response to pumping stress. The proposed aquifer test is similar in size and duration to the United Water of Idaho Floating Feather Well test performed in 1995. The test has been designed to meet DEQ Public Water System requirements for test pumping a groundwater source supply under IDAPA 58.01.08.550.03.i.

Pumping Phase of Test

Test well no. 1 will be pumped at a constant rate of 1,000 gpm. The aquifer test pumping duration is a maximum of seven-days or until 72-hours of water level stabilization has occurred in the pumping well. The maximum water volume to be produced is 30.93 ac-ft for a 7-day period of pumping. The pumping rate will be controlled by a discharge valve and monitored using a flow rate and totalizing meters. Groundwater will be discharged to the existing canal and irrigation system on the Quarter Circle D. J. Ranch. The groundwater produced during the test will be used for farm irrigation under existing irrigation water rights for the Quarter Circle D. J. Ranch.

Recovery Phase of Test

The recovery phase of the test will start at the completion of pumping. Water levels will be monitored in all wells for a period equal to or exceeding the pumping test duration and until full recovery occurs in the pumping well. The water level recovery data will also be used to determine transmissivity and storativity values at each well location. Recovery data will be used to characterize conditions and behavior of the lower aquifer system in response to pumping stress.

Pre-Test Monitoring

All aquifer test wells will be monitored for water level fluctuations one week prior to the start of the pumping phase of the test. The data will be used to evaluate antecedent water level trends and will provide a basis for correction of water level data collected during the test, if needed.

Water Level Monitoring

Existing wells located on the Quarter Circle D. J. Ranch will be used for water level monitoring during the aquifer test, pending the results of a detail field inspection of each monitoring well. Some potential monitoring wells are reported as artesian and are completed in the deeper aquifer zone below approximately 250 feet. Some potential monitoring wells are non-artesian and are completed in an intermediate zone between 100 and 180 feet, and two potential monitoring wells are completed in the shallow upper aquifer zone. The radial distances of these monitoring wells range between approximately 500 and 5,100 from the pumping well. Attached is an aquifer test map showing the approximate location of each potential well.

Prior to the start of the aquifer test, each monitoring well will undergo a detailed field inspection. Drilling records are not available for several proposed monitoring wells, as shown on the attached aquifer test map. At locations where well construction and completion cannot be confirmed from a driller's report, a down-hole video inspection will be performed and field measurements will be made. The criteria used in selecting a well as water level monitoring location for the aquifer test is listed below.

1. Access to well (property and measuring port)
2. Control of well pumping activity during the aquifer test
3. Well construction and well completion (dia., depth and screens)
4. Distance from aquifer test pumping well
5. Verification of well completion

Final monitoring well selection will be based on field inspection results and the criteria listed above. All well locations will be surveyed for location and elevation.

Groundwater levels at each monitoring well will be measured with water level meters and pressure transducer equipment during the test. Pressure data measurements will be converted and corrected to water level data. Atmospheric pressure will be measured and recorded on a minimum of two hour intervals during the pre-test, pumping and recovery phases of the aquifer test. Water level measurements will be collected on log-scale intervals to generate appropriate drawdown and recovery curves at each well location. The proposed water level measurement intervals for the aquifer test are listed in the table below.

Time Since Pumping Start/Stop	Time Intervals Between Readings (Maximum)
0-5 min.	0.5 min or as soon as possible
5-15 min.	1 min.
30-60 min.	10 min.
60-360 min.	30 min.
360-1020 min.	60 min.
1020-1440 min.	120 min.
1-7 days	4 hour

Test Well No. 1 Design and Construction Method

The Applicant is proposing to construct a new test well (test well no. 1) completed in the Lower Treasure Valley Aquifer to perform an aquifer test. Test well no. 1 will be located in the SE¼ of the NW¼, Section 11, T. 4N, R. 1W. The well is designed as a 12-inch diameter single string welded assembly with 80 feet of screen. Total well depth is approximately 500 feet. Final screen placement and total well depth will be based on drilling results and subsurface conditions encountered in the field. The well will be drilled using a reverse circulation drilling method with drilling mud as needed. A 12-inch boring will be drilled to approximately depth of 500 feet to determine subsurface conditions. The 12-inch boring will then be reamed to 24 inches in diameter. An artificial sand filter pack will be placed adjacent to screen sections. A poured 1-inch to ¾-inch chip bentonite seal will be placed from the top of the artificial sand filter pack to the surface. Test well no. 1 will be

constructed to IDWR and IDEQ Public Water System well construction standards so that it can be a permanent well if the application is approved.

Test well no. 1 is designed with a target well capacity of approximately 1,000 gpm with a 1.5 safety factor. A temporary submersible pump system will be installed to produce a sustained pumping rate of 1,000 gpm for aquifer test purposes. Power will be supplied by a temporary on-site generator. At the completion of the aquifer test, the well pump and on-site equipment will be removed. Attached is a design drawing for test well no. 1.

Test Well No. 2 Design and Construction Method

A shallow depth production well (test well no. 2) is proposed to provide temporary drilling water for construction of test well no. 1. Test well no. 2 will located approximately 100 feet away from test well no. 1 in the SE¼ of the NW¼, Section 11, T. 4N, R. 1W. Test well no. 2 is designed as a 6-inch well with an open interval between approximately 35 to 50 feet and a 20 foot deep chip bentonite well seal. The well will be drilled using an air rotary drill and drive method and will meet IDWR well construction standards. The well is designed to provide temporary drilling water at an estimate rate of 25 gpm or less and as needed to maintain water in the mud pit during the construction of test well no. 1. Test well no. 2 will be abandoned immediately following the construction of test well no. 1. Attached is a design drawing for test well no. 2.

The proposed scheduled is to start construction of test well no. 1 and 2 immediately following approval of the drilling permits. Approximately three weeks is required to construct test well no. 1 and well 2. The aquifer test is scheduled to start approximately one week following the completion of the test wells. The aquifer test consisting of pre-test monitoring, pumping, and recovery phases, will be conducted for an approximate three week period. IDWR will be notified in advance the of start and completion dates of the aquifer test and test well construction.

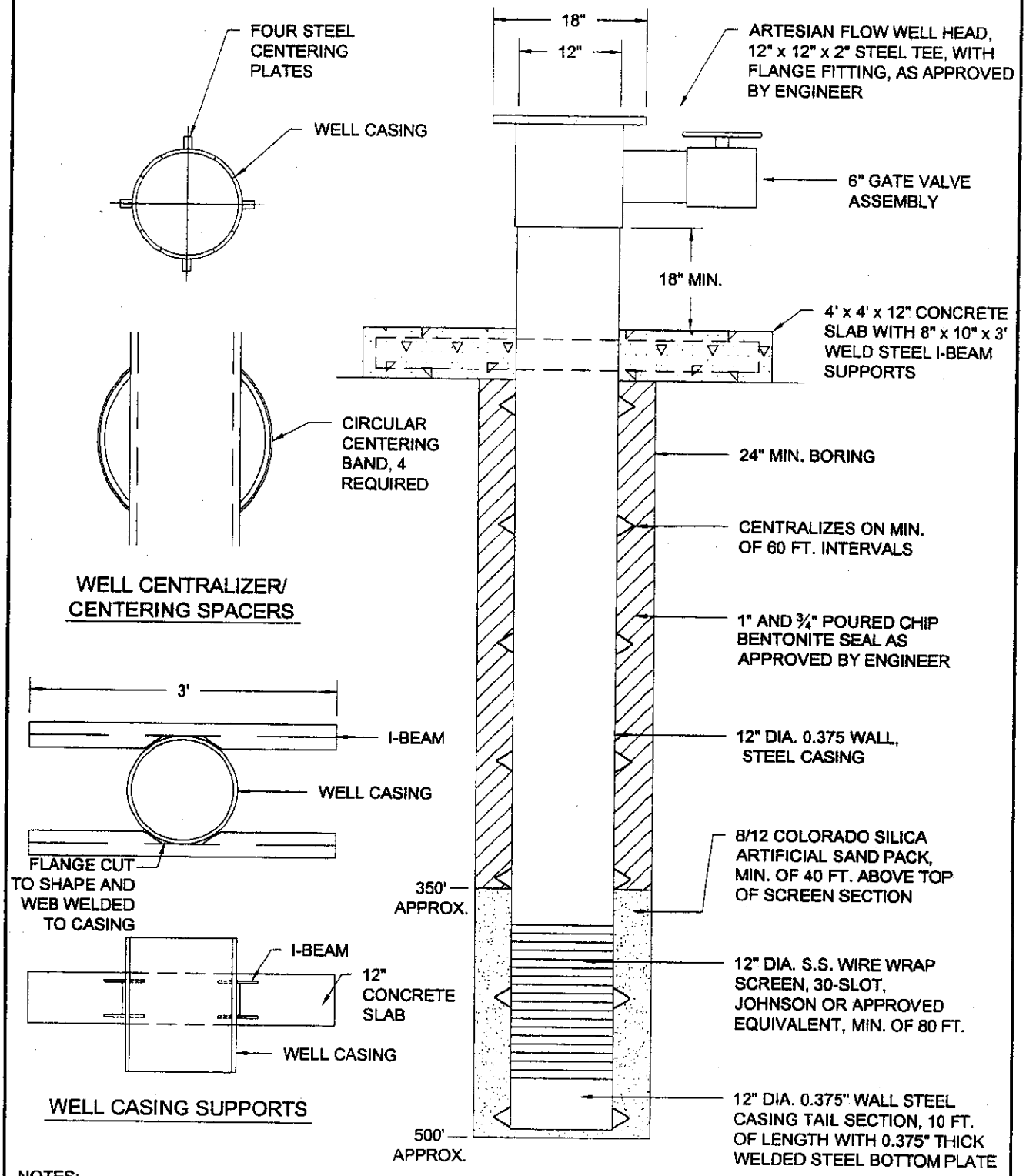
If you have questions or concerns, please contact me at 642-3304.

Sincerely,
HOLLADAY ENGINEERING COMPANY

By: _____
Chris Duncan, P.G.

cc: City of Eagle, Mayor Merrill
MSBT, Bruce Smith, City Attorney
Protestants, Notice of Second Prehearing Conference and Order mailing list

Attachments:
Aquifer Test Map
Test Well No. 1 Design Drawing
Test Well No. 2 Design Drawing



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM) AND 1.34 GREATER THAN WELL DESIGN TARGET OF 3.34 CFS (1,500 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

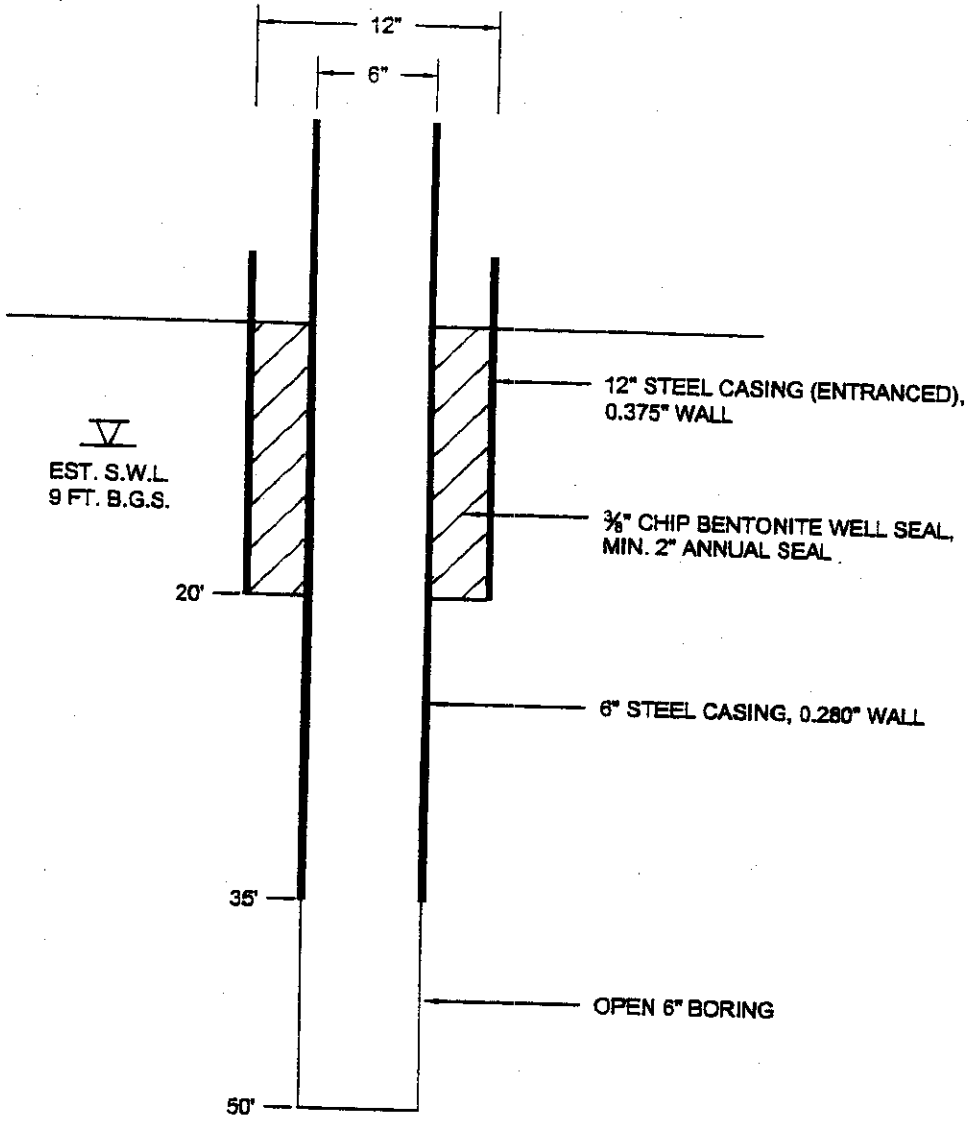
NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3384 · FAX# (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO:	EG 061204
DATE:	8/30/05
PLOTTED:	10/10/05
REVISED:	10/10/05
DRAWN BY:	JLJ
CHECKED BY:	CHD
PAGE	

G:\Eg061204\TESTWELL1.dwg



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, FINAL WELL DEPTH WILL BE BASED ON DRILLING RESULTS.

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 238 FAYETTE, ID 83844
(208) 645-2384 · FAX (208) 645-2100
EMAIL: hollad@holladayengineering.com

REUSE OF DOCUMENTS

TEMPORARY WELL NO. 1
DRILLING WATER WELL
CITY OF EAGLE, IDAHO

JOB NO. EG 041204
DATE 9/28/05
DRAWN BY JJ
CHECKED BY CHD

CERTIFICATE OF SERVICE

I hereby certify that on this 12TH day of October, 2005, a true and correct copy of the foregoing **Aquifer Test Proposal** was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

DANA & VIKI PURDY
5926 FLOATING FEATHER
EAGLE ID 83616

JOSEPH & LYNN MOYLE
c/o MICHAEL MOYLE
480 N. PLUMMER RD
STAR, ID 83669

MICHAEL McCOLLUM
1290 BUTTERFIELD
SAN ANSELMO CA 94960

MICHAEL & NANCY HEATH
401 N. PALMER LANE
EAGLE ID 83616

TIM CHENEY
PO BOX 190027
BOISE ID 83719

JERRY & MARY TAYLOR
3410 HARTLEY
EAGLE ID 83616

CORRIN & TERRY HUTTON
10820 NEW HOPE ROAD
STAR ID 83669

BOB & ELSIE HANSON
4151 HARTLEY ROAD
EAGLE ID 83616

RALPH & BARBARA WILDER
7320 W STATE STREET
EAGLE ID 83616

UNITED WATER ID INC
c/o SCOTT RHEAD
PO BOX 190420
BOISE ID 83719-0420

SAM & KARI ROSTI
1460 N. POLLARD LANE
STAR ID 83669

EUGENE MILLER
320 N PALMER LANE
EAGLE ID 83616

CHARLES MEISSNER JR
3101 N PALMER
EAGLE ID 83616

CHARLES HOWARTH
c/o GUNNER & MATT HOWARTH
833 N PALMER
EAGLE ID 83616

BILL FLACK
4035 HARTLYE ROAD
EAGLE ID 83616

RONALD SCHREINER
2153 N POLLARD LANE
STAR ID 83669

CITY OF STAR
c/o ROD LINJA
131 SW 5TH SVE STE A
MERIDIAN ID 83642

TONY & BRENDA O'NEIL
1910 N MOUNTAIN VISTA LN
STAR ID 83669

SCOTT AND NANCY REESER
499 N LINDER ROAD
EAGLE ID 83616

LEEROY & BILLIE MELLIES
6860 W STATE STREET
EAGLE ID 83616

DEAN & JAN COMBE
6440 W BEACON LIGHT
EAGLE ID 83616

NORMA MARES
23966 BLESSINGER ROAD
STAR ID 83669-5016

JULIE K FISHER
WHITE PETERSON
5700 FRRANKLIN ROAD
NAMPA ID 83687

JERRY A KISER
STOPPELLO & KISER
620 W HAYS
BOISE ID 83702

WESTERN REGION
ATTN JOHN WESTRA
2735 AIRPORT WAY
BOISE ID 83705-5082

BRUCE M. SMITH

HOLLADAY ENGINEERING CO.
ENGINEERS • CONSULTANTS
32 N. Main P.O. Box 235 Payette, ID 83661
(208) 642-3304 • Fax # (208) 642-2159

November 28, 2005

Mr. Rob Whitney
Western Regional Office
Idaho Department of Water Resources
2735 Airport Way
Boise, Idaho 83705-5082

Subject: Proposed Modifications to Aquifer Test Proposal for City of Eagle, Applications for Water Appropriation 63-32089 and 63-32090
HECO NO. EG061204 and EG 013305

Dear Mr. Whitney,

We completed our field investigation of potential monitoring wells at the Quarter Circle D. J. Ranch and have reviewed comments submitted by protestants concerning the City of Eagle aquifer test proposal. In response to comments and additional field information gathered, we are submitting a number of modifications to the original aquifer test proposal and a finalized test plan for Idaho Department of Water Resources (IDWR) approval. The proposed changes reflect the IDWR aquifer test recommendations as discussed at our November 8, 2005 meeting. The following lists the proposed changes to the aquifer test.

- Monitoring wells proposed for the test – a total of eight monitoring wells consisting of three existing wells on the Quarter Circle D. J. Ranch, construction of two new wells and cooperative use of two United Water Idaho monitoring wells.
- Pumping rate for the test has been changed to 1,500 gpm.
- A borehole geophysical survey will be conducted during construction of new wells.
- The maximum water level measurement frequency has been modified to two hour intervals during the later stages of the test.
- IDWR will be notified in advance of the time and date that the aquifer test will start and end

The City plans to conduct the aquifer test as soon as possible. The aquifer test is tentative scheduled to start on January 31, 2006. This start date is dependent on the completion of two new wells and regulatory approvals.

In order to perform the aquifer test, the City is requesting IDWR approval to divert groundwater at a 1,500 gpm (3.34 cfs) diversion rate and a maximum volume of 46.52 ac-ft from the aquifer test pumping well (Test Well No. 1) located in the SW ¼ of the NE ¼, Section 11, T.4N, R.1W. The requested diversion of groundwater is for testing purposes.

The following details the finalized aquifer test proposal and construction of test wells.

Purpose

The primary objectives of the aquifer test are to gather site specific hydrogeologic information in the Lower Treasure Valley Aquifer system from approximately 400 to 500 feet below ground surface as represented on the proposed applications for water appropriation (63-32089 and 63-32090). The aquifer test will consist of pumping and recovery phases to determine aquifer transmissivity and storativity valves for wells completed in the lower aquifer zone. The test will provide a field demonstration of pumping effects on groundwater levels at various monitoring well locations at distances up to approximately one mile from the aquifer test pumping well. The information gathered from the test will be used to characterize conditions and behavior of the aquifer system in response to pumping stress. Holladay Engineering Company will conduct the aquifer test and provide engineering services for the aquifer test project.

General Test Parameters

A seven day constant rate pump and recovery aquifer test is proposed at a pumping rate of 1500 gpm. Test Well No. 1 will be used as the pumping well for the test. A total of eight wells were selected for groundwater level monitoring during the test (including the pumping well). Water level measurements will be made on log scale time intervals using down-hole pressure transducer equipment. Back up measurements will be performed with handheld water meters. The proposed aquifer test is similar in size and duration to the United Water of Idaho Floating Feather Well test performed in 1995. The test has been designed to meet DEQ Public Water System requirements for test pumping a groundwater source supply under IDAPA 58.01.08.550.03.i.

Pumping Phase of Test

Test Well No. 1 will be pumped at a constant rate of 1,500 gpm for approximately seven days. The aquifer test pumping duration is a maximum of seven-days or until 72-hours of water level stabilization has occurred in the pumping well. The maximum water volume to be produced is 46.52 ac-ft for a seven day pumping period. A temporary line-shaft turbine pump will be installed and powered by an on-site generator. The pumping rate will be controlled by a discharge valve and monitored using a flow rate and totalizing meters. Groundwater will be discharged to the existing canal and irrigation system on the Quarter Circle D. J. Ranch. Water levels will be monitored in all wells during the pumping phase of the test. The water level draw-down data will used to determine transmissivity and storativity values.

Recovery Phase of Test

The recovery phase of the test will start at the completion of pumping. Water levels will be monitored in all wells for a period equal to or exceeding the pumping test duration and until full recovery occurs in the pumping well. The water level recovery data will also be used to determine transmissivity and storativity values.

Pre-Test Monitoring

All aquifer test wells will be monitored for water level fluctuations one week prior the start of the pumping phase of the test. The data will be used to evaluate antecedent water level trends and will provide a basis for correction of water level data collected during the test, if needed.

Water Level Monitoring

The criteria used in selecting a well as a water level monitoring well for the aquifer test is listed below.

1. Access to well (property and measuring port)
2. Control of well pumping activity during the aquifer test
3. Well construction and well completion (diameter., depth and screens)
4. Distance from aquifer test pumping well
5. Verification of well completion

A detailed field inspection of existing Quarter Circle D. J. Ranch wells was completed in November 2005 to determine and confirm open intervals and well completion. Three of the ten existing wells meet the monitoring well criteria listed above. The monitoring wells to be used during the aquifer test are listed below.

1. Test Well No. 1: 12- to 16-inch diameter production well to be constructed and completed in the lower aquifer zone from approximately 410 to 500 feet below surface (pending drilling results) in the SW ¼ of the NE ¼, Section 11, T.4N, R.1W. The well location is shown on the attached map. This well will be used as the pumping well during the test. A temporary line-shaft turbine pump will be installed capable of meeting a sustained 1,500 gpm pumping rate. The wellhead will be equipped with a flow meter, totalizer meters and valve to monitor and maintain a constant discharge. The water level will be monitored with a pressure transducer and by hand measurement using a water level meter.

2. Test Well No. 2: 12- to 16-inch diameter production well to be constructed and completed in the lower aquifer zone from approximately 410 to 500 feet below surface (pending drilling results) in the SE ¼ of the NW ¼, Section 11, T.4N, R.1W. The well location is shown on the attached map. This well will be used as dedicated deep monitoring well completed in the lower aquifer zone well during the aquifer test. The distance from the pumping well is 1,486 feet. The water level will be monitored with a pressure transducer and by hand measurement using a water level meter.

3. United Water Idaho Monitoring Well 1 B: 2-inch PVC monitoring well (part of a nested monitoring well) at the Hope Lutheran Church completed from 400 to 500 feet below ground. Total well depth is 500 feet. Water level is artesian with approximately 14.5 feet of head. Well log is attached. The distance from the pumping well is 4,139 feet. The well location is shown on the attached map. Water level measurements and monitoring will be performed with United Water Idaho using pressure transducer equipment.

4. Quarter Circle D. J. Ranch Well No. 4: 6-inch production well completed with an open interval from 235 to 260 feet below ground. There is no pump present in the well. Total well depth is 260 feet. Water level is artesian with approximately seven feet of head. The well log is not available. The well was video inspect with a down-hole camera. The distance from the pumping well is 4,908 feet. The well location is shown on the attached map. The water level will be monitored with a pressure transducer and by hand measurement using a riser tube and water level meter during the test.

5. Quarter Circle D. J. Ranch Well No. 6: 16- to 10-inch production well with line-shaft turbine pump completed with open interval from 234 to

395 feet below ground. Total well depth is 406 feet. Water level is artesian with approximately 10 feet of head. Well log is attached. The distance from the pumping well is 2,096 feet. The well location is shown on the attached map. The water level will be monitored with a pressure transducer and by hand measurement using a riser tube and water level meter during the test.

6. United Water Idaho Monitoring Well 1 A: 2-inch PVC monitoring well (part of a nested monitoring well) at the Hope Lutheran Church completed from 280 to 380 feet below ground. Total well depth is 380 feet. Water level is artesian with approximately 14.5 feet of head. The distance from the pumping well is 4,139 feet. The well location is shown on the attached map. Water level measurements and monitoring will be performed with United Water Idaho using pressure transducer equipment.

7. Strata Boring No. 1 Monitoring Well: 1-inch PVC monitoring well completed from 45 to 55 feet below ground. Total well depth is 55 feet. Depth to water level is 6.8 feet. Well log is attached. The distance from the pumping well is 1,349 feet. The well location is shown on the attached map. The water level will be monitored with a pressure transducer.

8. Strata Boring No. 1b Monitoring Well: 1-inch PVC monitoring well completed from 10 to 15 feet below ground. Total well depth is 15 feet. Depth to water level is 7.1 feet. Well log is attached. The distance from the pumping well is 1,312 feet. The well location is shown on the attached map. The water level will be monitored with a pressure transducer.

Groundwater levels at each monitoring well will be measured with water level meters and/or pressure transducer equipment during the test. Pressure data measurements will be converted and corrected to water level data. Atmospheric pressure will be measured and recorded on a minimum of two hour intervals during the pre-test, pumping and recovery phases of the aquifer test. All monitoring well used in the tests will be surveyed for location and elevation. Water level measurements will be collected on log-scale intervals to generate appropriate drawdown and recovery curves at each well location. The water level measurement intervals for the aquifer test are listed in the table below.

Time Since Pumping Start/Stop	Time Intervals Between Readings (Maximum)

0-5 min.	0.5 min or as soon as possible
5-15 min.	1 min.
30-60 min.	10 min.
60-360 min.	30 min.
360-1020 min.	60 min.
1020-1440 min.	120 min.
1-7 days	2 hour maximum

Analysis and Reporting

Water level data collected from pumping and monitoring wells during the test will be plotted as drawdown and recovery curves. The data will be analyzed using appropriate methods for aquifer conditions (confined, semi-confined, or unconfined) to determine aquifer parameters and characteristics. The data and analysis will be compiled into a report to the City of Eagle. The test data will be used to characterize conditions and behavior of the lower aquifer system in response to pumping stress.

The following details the proposed construction of Test Well No. 1, Test Well No. 2 and construction of a Temporary Well No. 1 to provide drilling water during the well construction project.

Test Well No. 1 Design and Construction Method

The applicant is proposing to construct a new test well (Test Well No. 1) completed in the Lower Treasure Valley Aquifer to be used as the pumping well for the aquifer test. Test Well No. 1 will be located in the SE¼ of the NW¼ of the, Section 11, T. 4N, R. 1W. The well is designed as a 16- to 12-inch diameter single string welded assembly with 80 feet of screen. Total well depth is approximately 500 feet. Final screen placement and total depth will be based on drilling results and subsurface conditions encountered in the field. The well will be drilled using a reverse circulation drilling method with drilling mud as needed. A 12-inch boring will be drilled to an approximate depth of 500 feet to determine subsurface conditions. A geophysical survey consisting of dual normal electric log, natural gamma log and temperature log will be performed in the 12-inch boring. The 12-inch boring will then be reamed to 24 and 28 inches in diameter. An artificial sand filter pack will be placed adjacent to screen sections. A poured ¾-inch chip bentonite seal will be placed from the top of the artificial sand filter pack to the surface. The well will be constructed, developed and tested to IDWR and IDEQ Public Water System well construction standards.

At the completion of the aquifer test, the well pump and on-site equipment will be removed. The well will be capped and decommissioned. Attached is a design drawing for Test Well No. 1.

Test Well No. 2 Design and Construction Method

The applicant is proposing to construct a Test Well No. 2 completed in the Lower Treasure Valley Aquifer for use as a deep monitoring well during the aquifer test. Test Well No. 2 will be located in the NW¼ of the SE¼ of the, Section 11, T. 4N, R. 1W and will be constructed and completed in the same manner as Test Well No. 1. The well is designed as a 16- to 12-inch diameter single string welded assembly with 80 feet of screen. Total well depth is approximately 500 feet. Final screen placement and total depth will be based on drilling results and subsurface conditions encountered in the field. The well will be drilled using a reverse circulation drilling method with drilling mud as needed. A 12-inch boring will be drilled to an approximate depth of 500 feet to determine subsurface conditions. A geophysical survey consisting of dual normal electric log, natural gamma log and temperature log will be performed in the 12-inch boring. The 12-inch boring will then be reamed to 24 and 28 inches in diameter. An artificial sand filter pack will be placed adjacent to screen sections. A poured ¾-inch chip bentonite seal will be placed from the top of the artificial sand filter pack to the surface. The well will be constructed, developed and tested to IDWR and IDEQ Public Water System well construction standards.

At the completion of the aquifer test, the well pump and on-site equipment will be removed. The well will be capped and decommissioned. Attached is a design drawing for Test Well No. 2.

Temporary Well No. 1

Temporary Well No. 1 will be a shallow production well to provide temporary drilling water for construction of Test Well No. 1. The well will be located approximately 100 feet away from Test Well No. 1 in the SE¼ of the NW¼, Section 11, T. 4N, R. 1W. Temporary Well No. 1 is designed as a 6-inch well with an open interval between approximately 35 to 50 feet and a 20 foot deep chip bentonite well seal. The well will be drilled using an air rotary drill and drive method and will meet IDWR well construction standards. The well is designed to only provide temporary drilling water at an estimated rate of 25 gpm or less and as needed to maintain water in the mud pit during the construction of Test Well No. 1. The well will be abandoned immediately following the construction of Test Well No. 1. Attached is a design drawing for Temporary Well No. 1.

The proposed scheduled is to start construction of Test Well No. 1, Test Well No. 2 and Temporary Well No. 1 immediately following approval of the drilling permits. Approximately two to three weeks is required for the construction, development and testing of each test well. The aquifer test is scheduled to start approximately one week following the completion of the test wells. The tentative start date for the aquifer test is January 31, 2006. The aquifer test consisting of pre-test monitoring, pumping and recovery phases will be conducted for an approximate three week period. An additional two weeks is required for data analysis and report preparation. IDWR will be notified in advance the of start and completion dates of the aquifer test and test well construction.

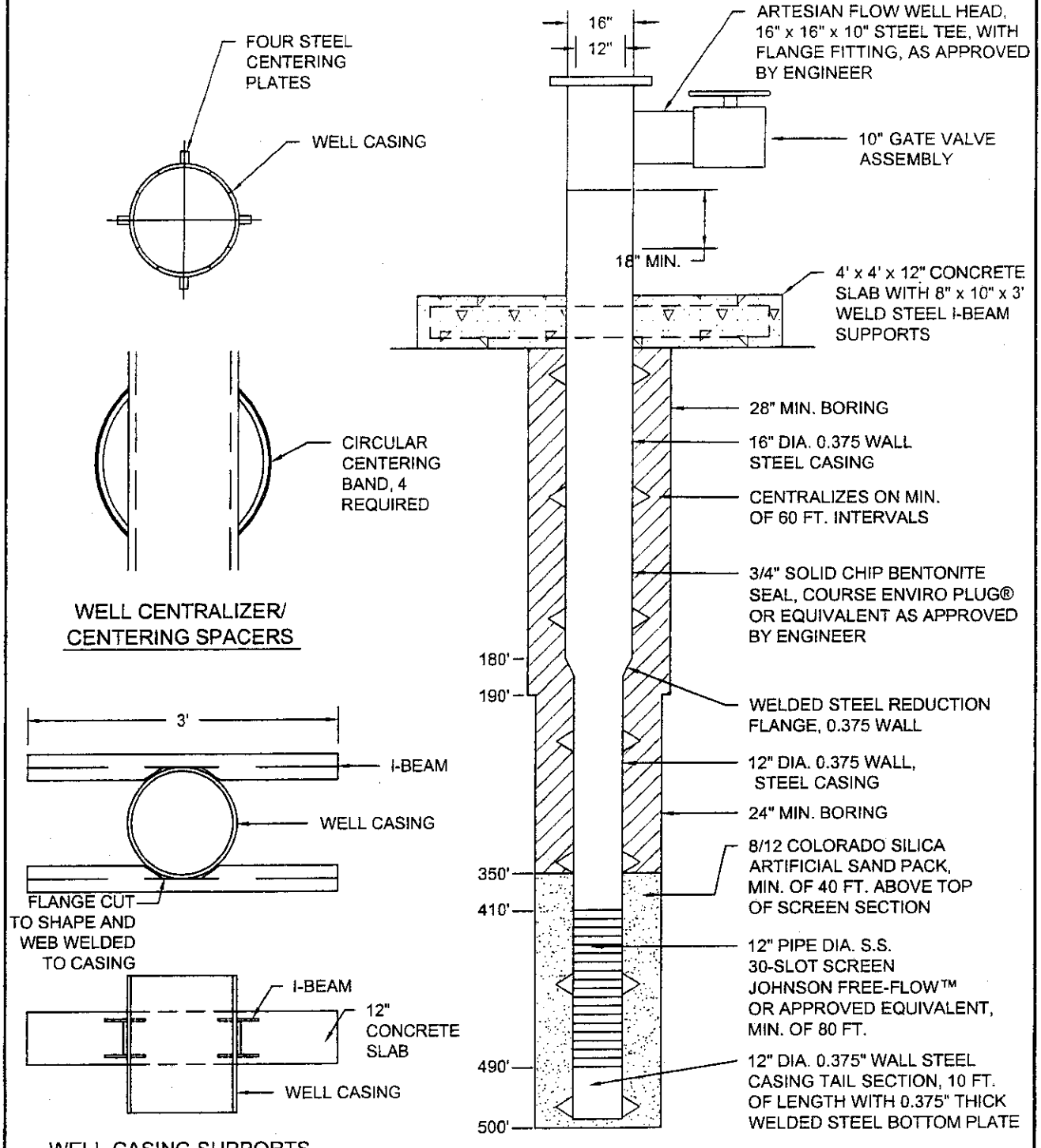
If you have questions or concerns, please contact me at 642-3304.

Sincerely,
HOLLADAY ENGINEERING COMPANY

By: _____
Chris Duncan, P.G.

cc: City of Eagle, Mayor Merrill
MSBT, Bruce Smith, City Attorney

Attachments:
Aquifer Test Map
Driller's Logs for Monitoring Wells
Test Well No. 1 Design Drawing
Test Well No. 2 Design Drawing
Temporary Well No. 1 Design Drawing
Drilling Permit Test Well No. 2



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

REGISTERED PROFESSIONAL GEOLOGIST
CHRIS H. DUNCAN
1046
STATE OF IDAHO

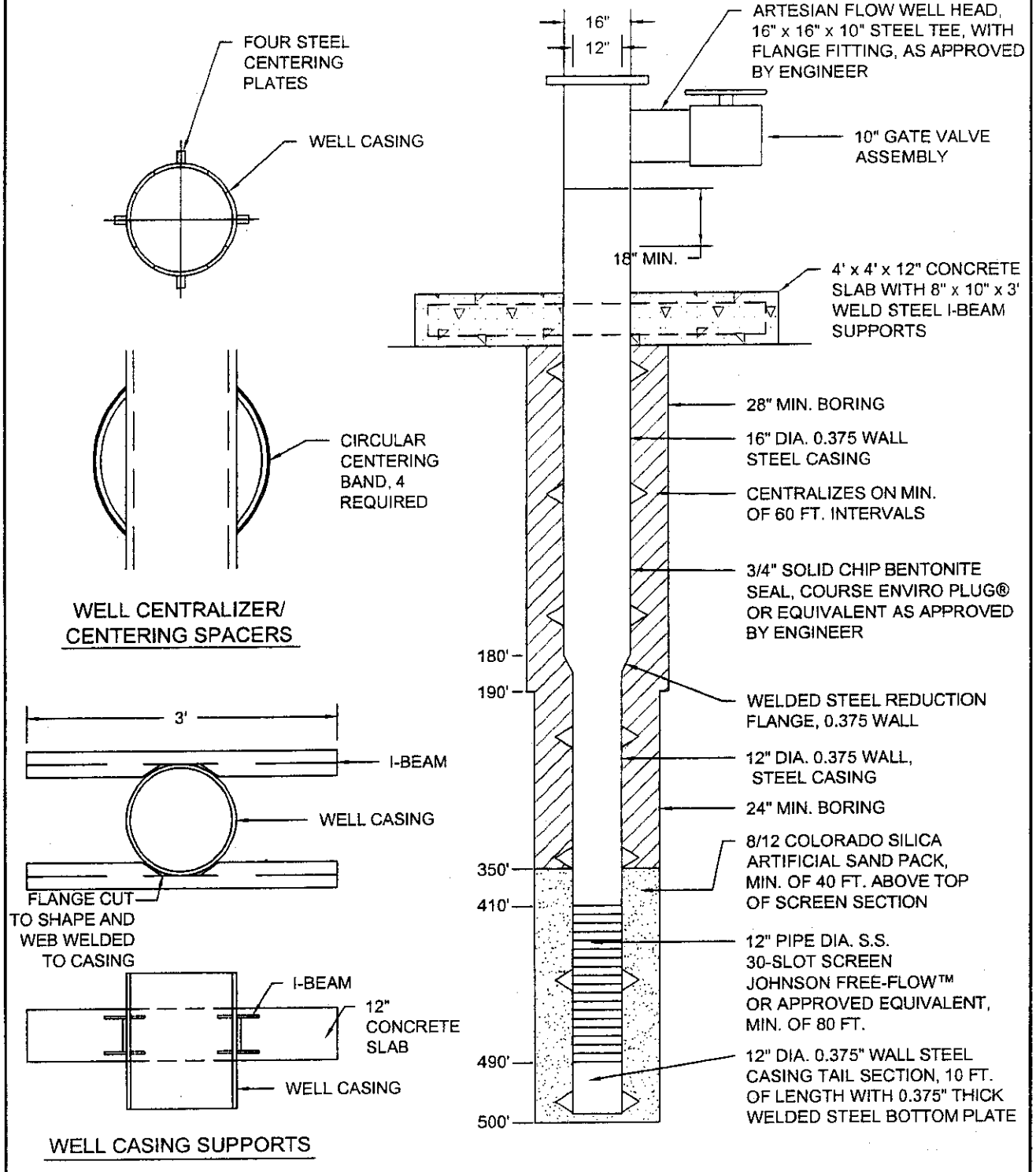
NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO.	EG 061204
DATE	11/03/05
PLOTTED	11/15/05
REVISED	11/15/05
DRAWN BY	JLJ
CHECKED BY	CHD

G:\Eg\061204\AQUIFER TEST\TESTWELL-1-REV2.dwg



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

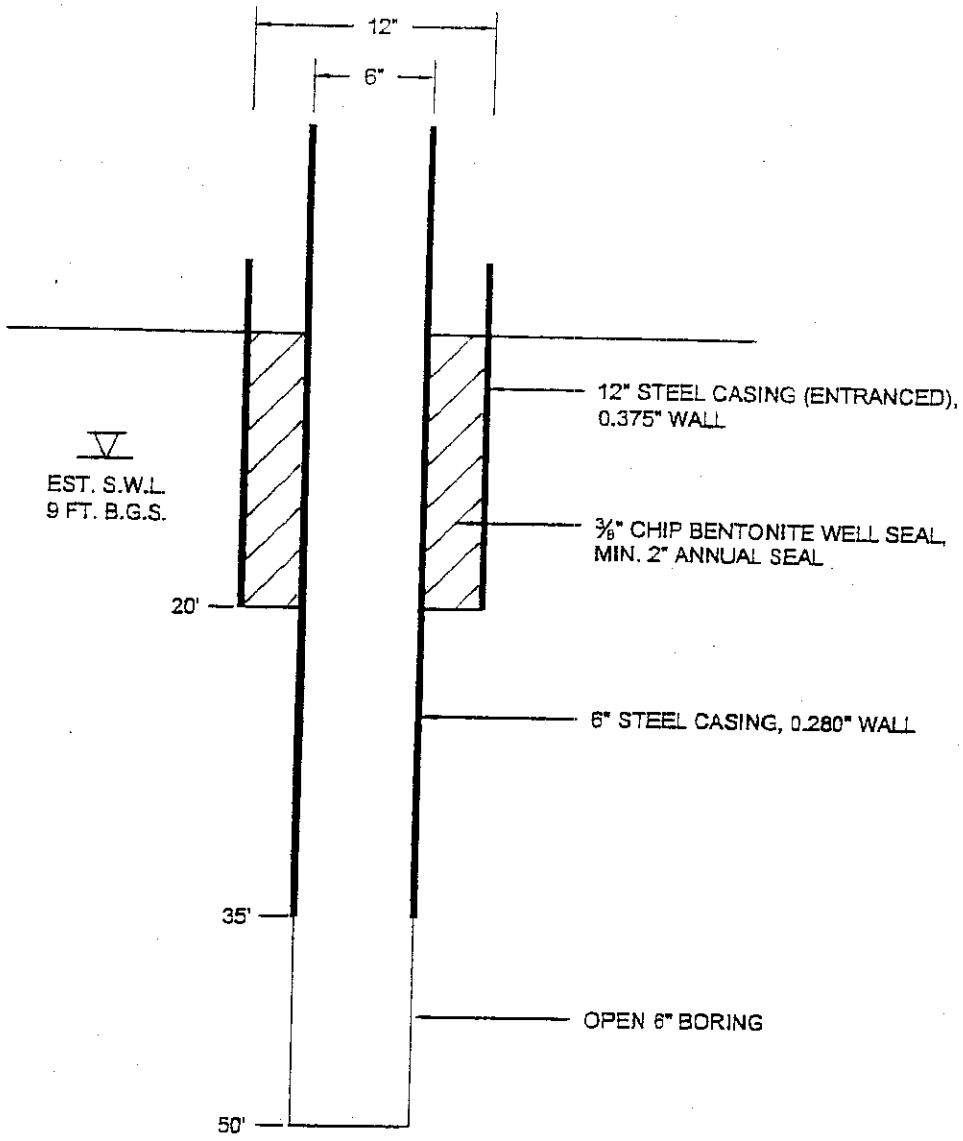
NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 2
CITY OF EAGLE, IDAHO

JOB NO:	EG 061204
DATE:	11/03/05
PLOTTED:	11/15/05
REVISED:	11/15/05
DRAWN BY:	JLJ
CHECKED BY:	CHD

G:\Eg\061204\AQUIFER TEST\TESTWELL-1-REV2.dwg



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, FINAL WELL DEPTH WILL BE BASED ON DRILLING RESULTS.

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 238 PAYETTE, ID 83661
(208) 642-3304 · FAX# (208) 642-2138
EMAIL: holladayengineering@yahoo.com

TEMPORARY WELL NO. 1
DRILLING WATER WELL
CITY OF EAGLE, IDAHO

JOB NO. EG 041304
DATE 5/26/05
PLOTTED 5/26/05
DRAWN BY JJ
CHECKED BY

UNITED W. Idaho Monitoring Well 1 & 8

RECEIVED
Form 238-7
3/95
OCT 28 1997
Department of Water Resources

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-w-0633-801
Other IDWR No. _____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 4 North X or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11 N/E 1/4 (10 acres) S/E 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St & Linder (Hope Luth Church) City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☐ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection X Other Test well

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD

Was drive shoe used? ☐Y ☐N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air XX Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			~~see drawing for pipe information~~		

RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

MICROFILMED
JAN 09 1998

Completed Depth 580 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

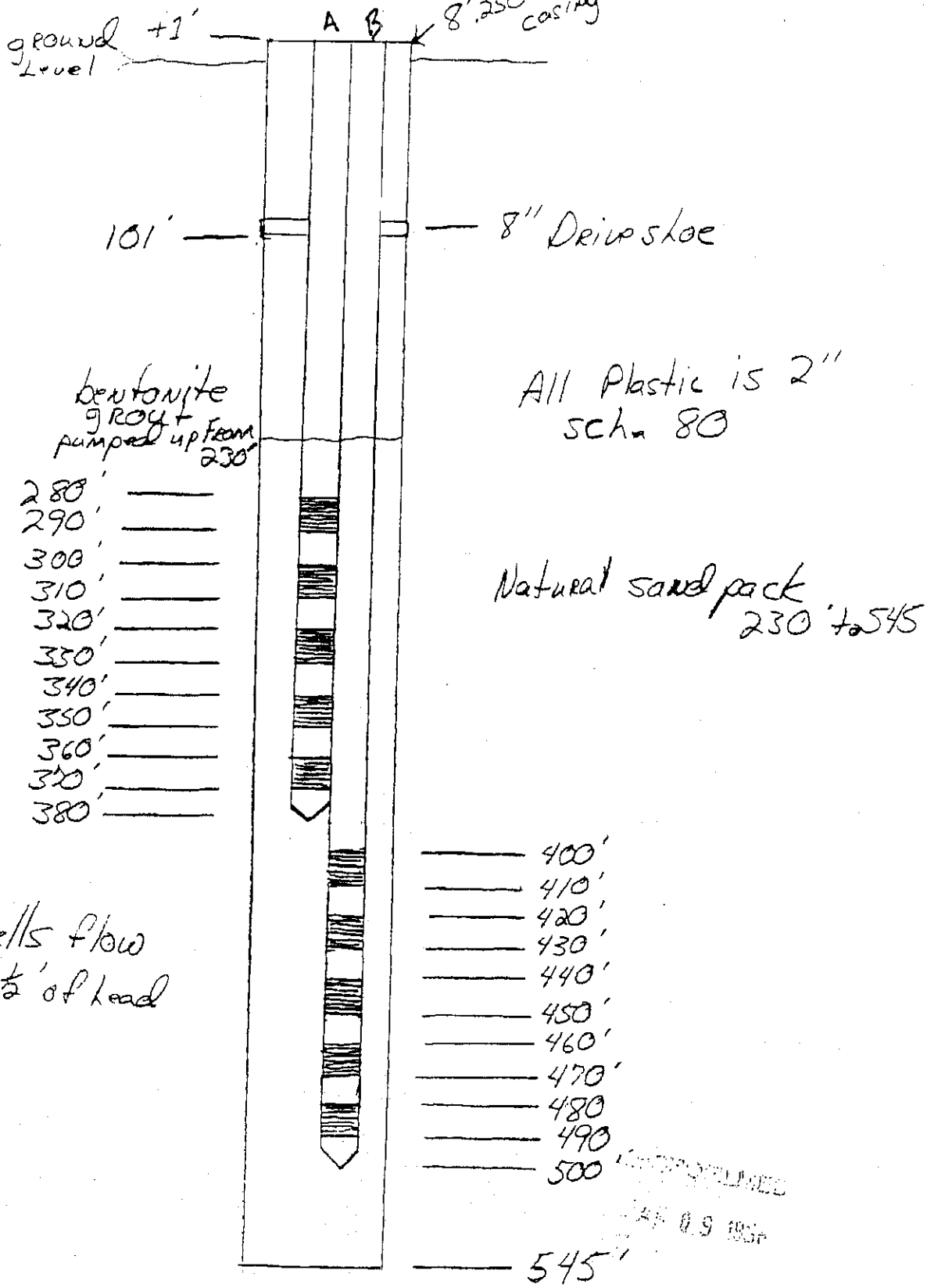
13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official _____ Date _____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

United Water State of Linder 63-97-W-0633-801
test Well #1
67931

Not to scale



All Plastic is 2" sch. 80

Natural sand pack 230' to 545'

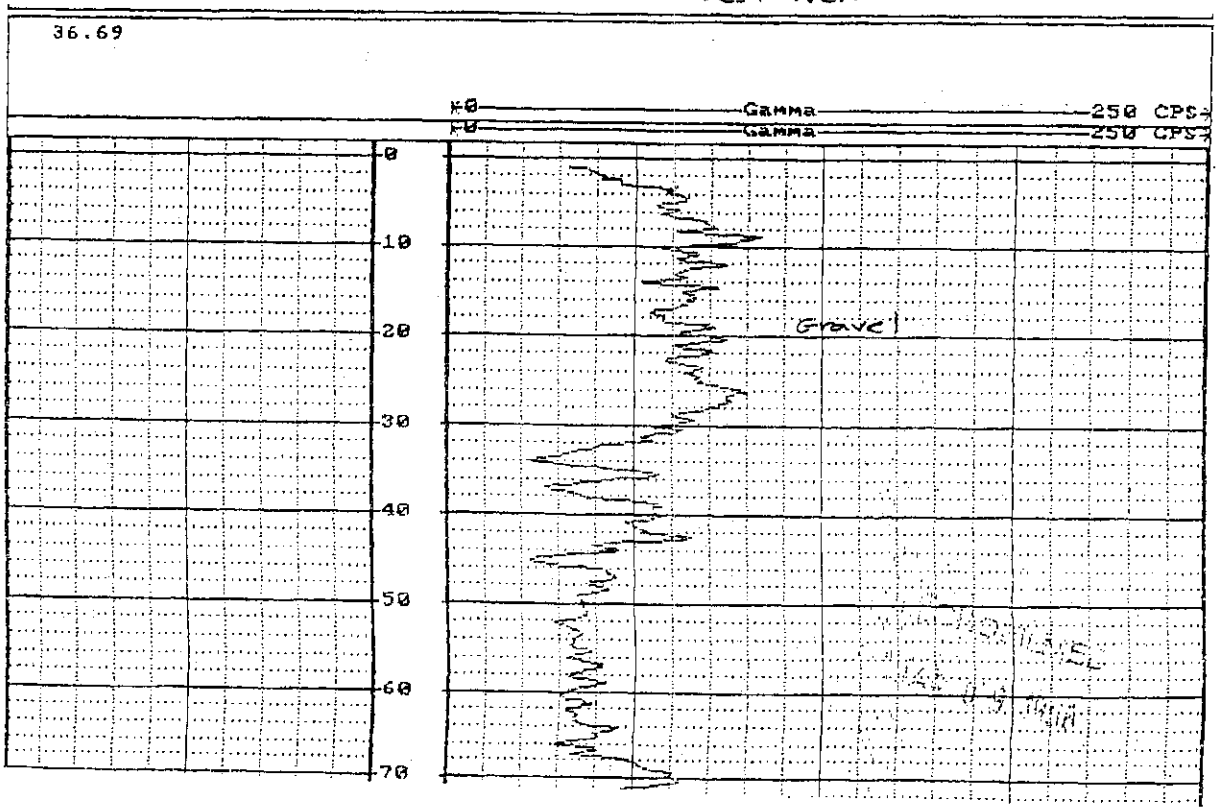
Both Wells flow under 14½' of head

RECEIVED
OCT 23 1997
WATER REBOURCES
WESTERN REGION

63-97-W-0633-801

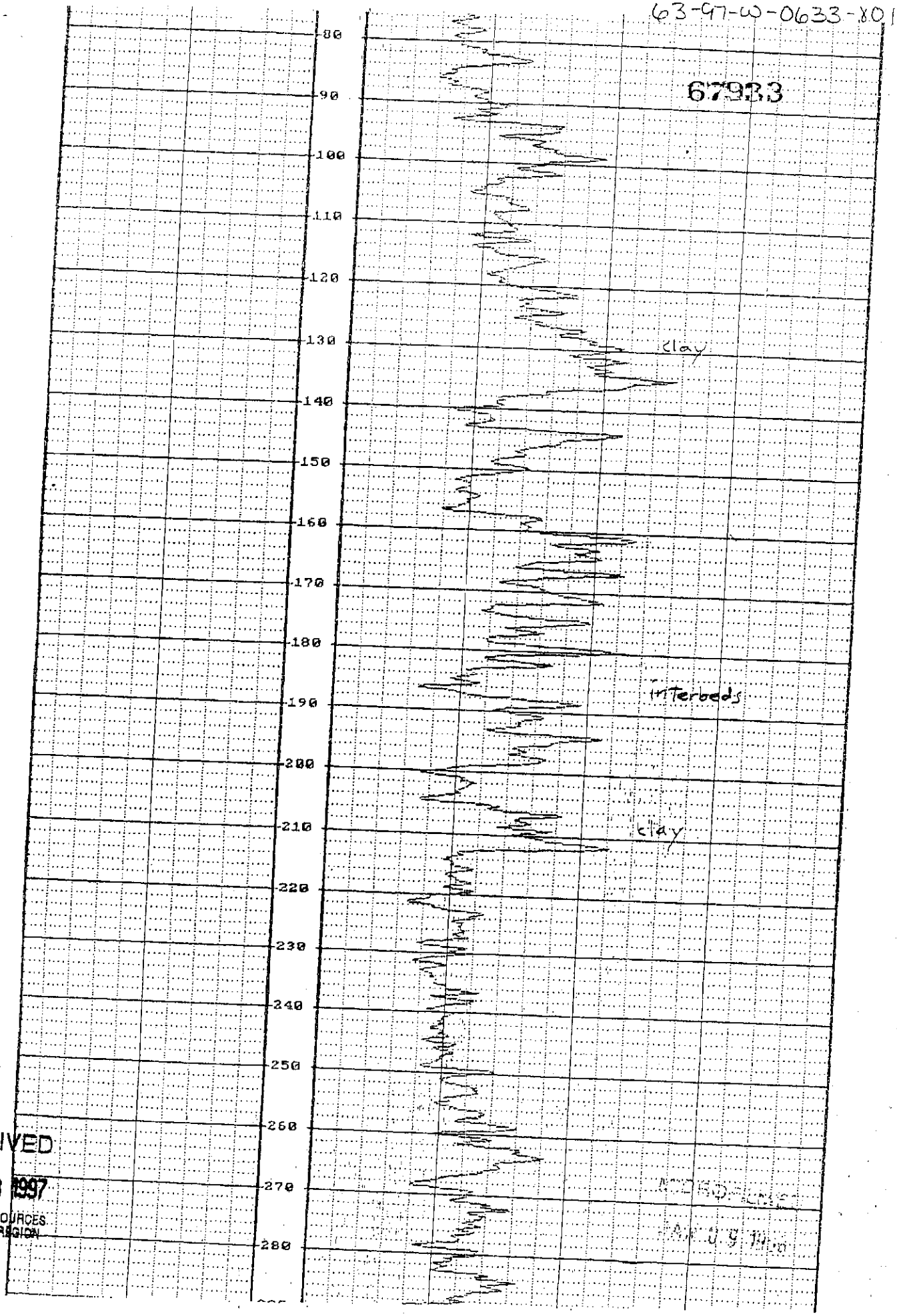
67932

State # Linder Test Well



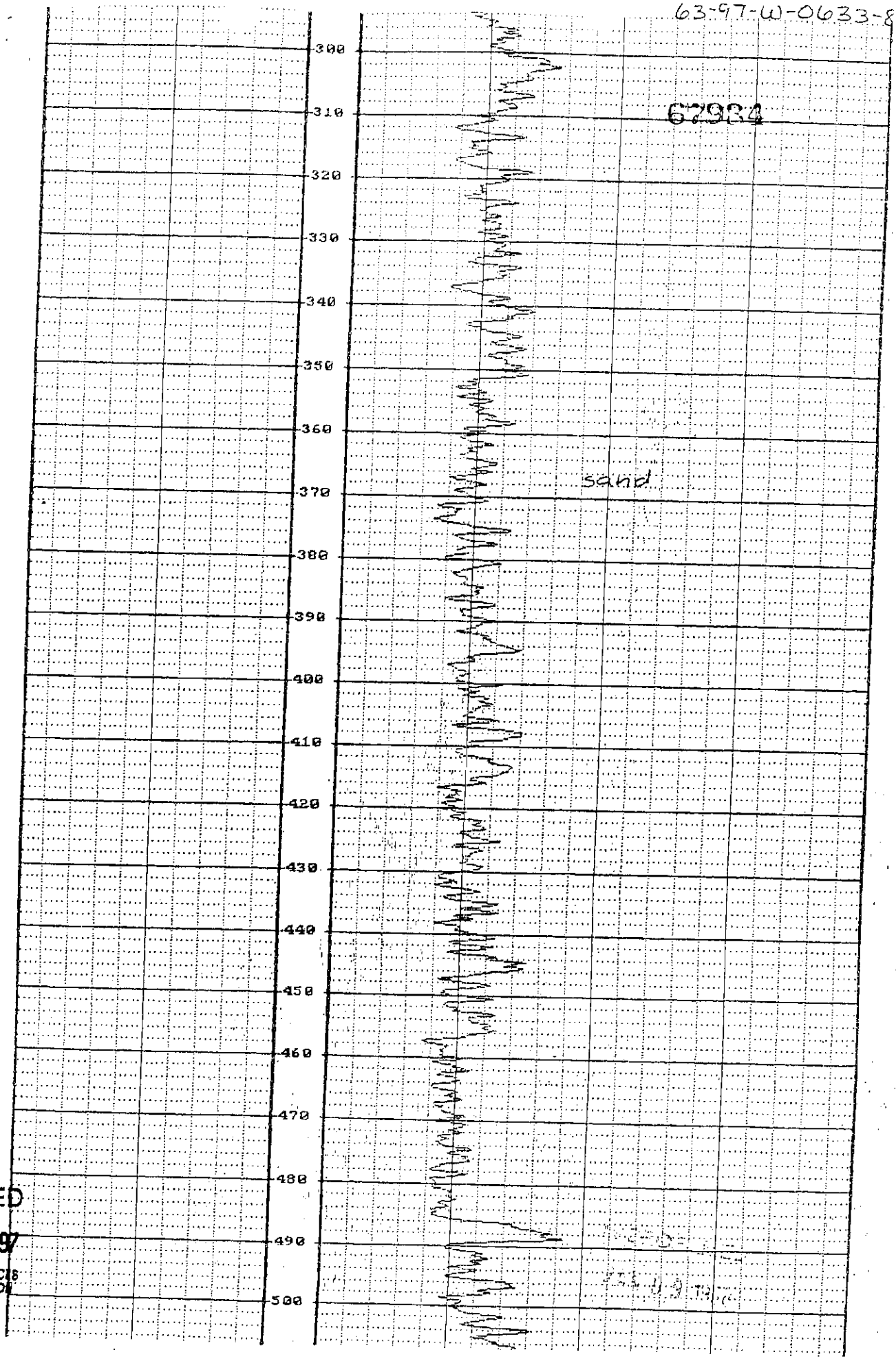
63-97-W-0633-801

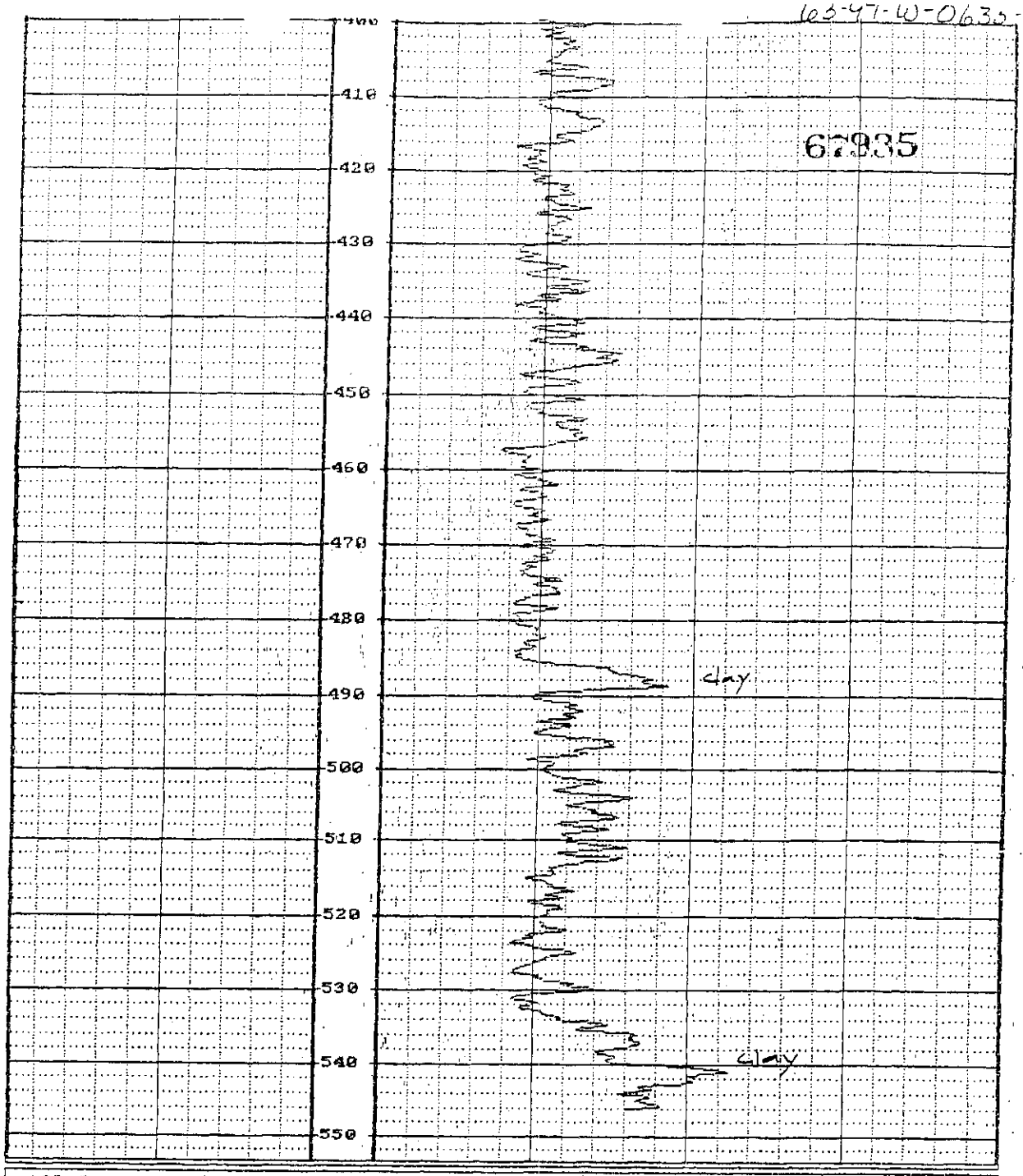
67933



63-97-W-0633-801

62984



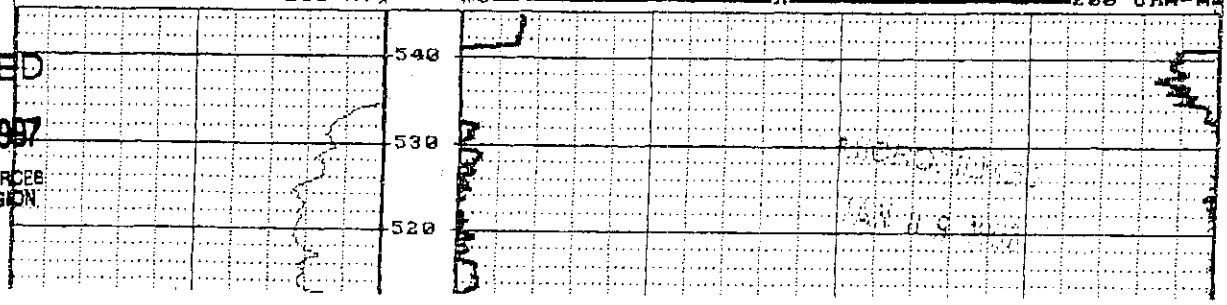


108.04

0 Gamma 250 CPS

351.25 215.16

0 SP 100 mV
0 SP 100 mV
0 R 200 ohm-m
0 R 200 ohm-m



QUARTER CIRCLE D.J. RANCH No. 6

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

WELL OWNER

Name Quarter Circle D.J. Ranch

Address Star, Idaho (Home Place)

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 16 inches Total depth 406 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	16 inches	1.18" feet	253 feet
250 inches	10 inches	223 feet	406 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☒ Factory ☐ Knife ☐ Torch

Size of perforation 3/16 inches by 3 inches

Number		From	To
5,152	perforations	234 feet	395 feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☒ Yes ☐ No Size of gravel 3/8 minus 30 yds.

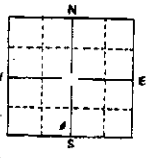
Placed from 223 feet to 406 feet

Surface seal depth 22 Material used in seal ☒ Cement grout ☐ Puddling clay ☐ Well cuttings

Seeding procedure used ☐ Slurry pit ☒ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County Ada

S/E ¼ S/W ¼ Sec. 2 T. 4 N/S R. 1 E/W

7. WATER LEVEL

Static water level feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☒ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG 40055

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
16"	0	3	Top Soil		X
"	3	12	Light clay and sand		X
"	12	27	Fine sand, some clay	X	
"	27	105	Blue clay		X
"	105	240	Sand with clay binder	X	
"	240	260	Sticky brown clay		X
"	260	295	Sand, some small layers of clay	X X	
"	295	318	Sticky brown clay		X
"	318	380	Sand, some small layers of clay	X X	
"	380	404	Sand, some clay	X	
"	404	406	Sticky light brown clay		X
			Gravel pack		
			30 yds. of 3/8 minus gravel		
			10" shoe on top of liner		
			15" shoe on bottom of liner		
			NOT TESTED AS OF 2/20/74		

10. Work started Nov 28/73 finished Dec 30, 73

11. DRILLERS CERTIFICATION

Firm Name W. E. Stevens & Sons Firm No. 153

Address 3709 Hawthorne Drive Date 12/30/73

Signed by (Firm Official) Wayne E. Stevens

and

(Operator)

MICROFILMED

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

STRATA Boring 1

Draft

~~Boring No. 1a~~

Subsurface Soil Description

Top of Casing Elevation =

Ground Surface Elevation =

Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
~~Sandy SILT~~ (Native) – tan, very stiff, moist.	1	ML							Trace vegetation and organics observed to 3 inches BGS.
CLAY with SAND – brown, soft to stiff, moist to saturated.	2–6	CL							Top of protective steel casing above ground = 2.8 feet.
									Bentonite Seal from 0 to 10 feet
									1 1/4 inch ø PVC Well
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated.	6–15	GP							
*Reading on 9-7-2005 = 7.1 feet									Sand pack from 10 to 15 feet
									1 1/4 inch ø PVC screened well from 10 to 15 feet
									Standpipe piezometer installed to 15 feet.
Boring terminated at 15 feet BGS.	15–20								

File: EAGSPO	Boring Number: B-1a
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6.5'	Logged By: AM

STRATA GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity from the Ground Up

EXPLORATORY BORING LOGS

Sheet 1 of 1

F:\Projects\EagSpo\B05188a\dwg\B05188a-bl 1-2.dwg 9/19/2005 6:13:07 PM MDT

STRATA Boring 1b

Draft

Boring No. 1 Subsurface Soil Description Top of Casing Elevation = Ground Surface Elevation =	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Sandy SILT (Native) – tan, very stiff, moist.	1	ML							Trace vegetation and organics observed to 3 inches BGS.
CLAY with SAND – brown, soft to stiff, moist to saturated.	2 3 4 5 6	CL			1 1 2 2 6 10	3 16	0.75 1.0 1.25		Top of protective steel casing above ground = 3.1 feet. Passing #200 screen = 78%. BG Liquid Limit (LL) = 30. Plastic Index (PI) = 11. Moisture Content = 24.9%. BG
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated. *Reading on 9-7-2005 = 6.8 feet	7 8 9 10 11 12 13 14 15 16 17 18 19 20	GP *			32 25 38 4 15 27	38 26			BG Bentonite Seal 1 inch ø PVC Well Heaved sand from 15 to 16 feet. BG BG

File: EAGSPO	Boring Number: B-1
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Independently From the Ground Up

EXPLORATORY BORING LOGS

Sheet 1 of 3

F:\Projects\EagSpo\B05188a\dwg\B05188a-bl 1-2.dwg 9/19/2005 5:16:00 PM MDT

Draft

Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated.	21	GP			7 39 32	43			BG Heaved sand from 20 to 21 feet.
	22								
	23								
Fat CLAY – dark gray, hard to very stiff, wet.	24	CL							
	25				26 34 42	61			BG Minimal recovery, possible rock at bottom of spoon.
	26								
	27								Passing #200 screen = 96%.
	28				11 15 26	31	>4.5 4.0 3.5		BG RG RG Liquid Limit (LL) = 58. Plastic Index (PI) = 31.
	29								
	30				10 13 20	33	3.0 3.5		BG
	31								
	32								Bentonite Seal
	33								1 inch ø PVC Well
	34								
	35				7 12 17	29	1.5 3.0		BG
...except light brown at 36.5 feet.	36								
	37								
Clayey SAND – light brown, dense, saturated.	38	SC							
	39								
	40								

F:\Projects\EagSpo\B05188a\dwg\B05188a-bl 1-2.dwg 9/19/2005 5:26:17 PM MDT

File: EAGSPO	Boring Number: B-1
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL & ENGINEERING & MATERIALS TESTING
Integrity From the Ground Up

EXPLORATORY BORING LOGS

Draft

Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer(tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Clayey SAND – light brown, dense, saturated.	41–44	SC			27 30 41	47			Trace orange staining observed in sample. BG RG RG Bentonite Seal from 0 to 45 feet 1 inch ø PVC Well
Poorly–Graded medium SAND – light brown, very dense, saturated.	45–55	SP			29 56 60 33 59 62	69 71			RG Sand pack from 45 to 55 feet 1 inch ø PVC screened well from 45 to 55 feet RG BG Standpipe piezometer installed to 55 feet.
Boring terminated at 55 feet BGS.	55–60								

File: EAGSPO	Boring Number: B–1
Project No.: B05188A	Date Drilled: 8–30–2005
Drill Rig: BK–81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Independently From the Ground Up

EXPLORATORY BORING LOGS

F:\Projects\EagSpo\B05188a\dwg\B05188a-bl 1-2.dwg 9/19/2005 6:43:23 PM MDT

HOLLADAY ENGINEERING CO. Payette, ID 8366[illegible]

Idaho Dept of Water Resources

Check Number: 26806

Date: 11/2/2005 Check Amt: $200.00

Voucher	Invoice	Type	Date	Reference	Balance	Discount	Pay Amount
8867		Invoice	11/02/05	IDWR Permit	$200.00	$0.00	$200.00

ORIGINAL DOCUMENT PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER

26806

HOLLADAY ENGINEERING CO.
ENGINEERS - CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
PHONE: 208-642-3304 FAX: 208-642-2159

FARMERS & MERCHANTS STATE BANK
1850 N. Whitley Dr.
Fruitland, Idaho 83619

92-151/1241

NUMBER 26806

Exactly Two hundred and xx / 100 Dollars

DATE	AMOUNT
11/2/2005	$200.00

PAY TO THE ORDER OF
Idaho Dept of Water Resources
PO Box 83720
Boise ID 83720-0098

HOLLADAY ENGINEERING CO.

THIS DOCUMENT CONTAINS HEAT SENSITIVE INK. TOUCH OR PRESS HERE - RED IMAGE DISAPPEARS WITH HEAT.

⑈026806⑈ ⑆124101513⑆ 57005025 0⑈

E Form 235-1
1/31/03

Drilling Permit No. _____
Drilling Permit I.D. Tag No. _____
Water Right Permit No. _____
Injection Permit No. _____

State of Idaho

Department of Water Resources

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): Eaglefield, LLC

2. Mailing Address: 6951 Duncan Lane

City: Boise State: ID Zip Code: 83714 Telephone (208) 939-4310

3. Proposed Well Location: Twp. 4N, Rge. 1W, Sec. 11, ____ 1/4 NW 1/4 SE 1/4;

Gov't Lot No. _____ County Ada Lat. ____:____:____ Long. ____:____:____

Street Address of Well Site 50' West of intersection of W.Tatlock Dr and N. Golden Crown Way City Eagle
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision Lots 83 and 84 Block 8 of Eaglefield Estates Subdivision

4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Livestock [X] Test [ ] Other _____ (Describe)
Type__ Number Hd.__

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells:

5. Well Construction Information:

A. [ ] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 16-inch Proposed Maximum Depth 500 feet

C. Anticipated bottom hole temperature:
[X] 85 For less (Cold Water Well)
[ ] 85F to 212F (Low Temp. Geo. Well)
[ ] 212 F. or more (Geothermal Well)

6. Construction Start Date: December 20, 2005

7. Anticipated Well Driller: Riverside, Inc. Driller's Lic. No. 333
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: _____ Date 11/28/05

Address (if different than owner): _____

City: _____ State: _____ Zip Code: _____ Telephone _____

Title: Managing Member
(Owner, Firm Representative, Other)

State of Idaho
DEPARTMENT OF WATER RESOURCES
Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190
FAX (208) 334-2348

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

December 22, 2005

Chris Duncan
Holladay Engineering Co.
P.O. Box 235
Payette, ID 83661

RE: Approval of Pump Test Plan – City of Eagle (Water Rt. Appl. No. 63-32089 & 63-32090).

Dear Mr. Duncan:

The Idaho Department of Water Resources (Department) has completed a final review of the revised Pump Test Plan submitted by Holladay Engineering Company. The Department concludes that this plan is acceptable. The plan is hereby approved and will be attached to the City of Eagle drilling permits (see conditions #16 & #17 of the drilling permits). As we discussed in our telephone conversation of December 21, 2005, the Department requests the following additions or modifications to the plan:

1) Barometric pressure should be monitored and recorded to coincide with all water level measurements both pre-test and during the test.
2) Maximum frequency of water level measurements should not exceed 1 hour.
3) Raw data will be submitted to the Department within 10 days of completing the test.
4) A "step-test" will be performed on test wells No. 1 & 2 to determine specific capacity, prior to conducting the actual pump test.

If you have any questions concerning this letter, please contact me at this office.

Respectfully,

ROBERT B. WHITNEY
Sr. Water Resource Agent

1019-03

State of Idaho
DEPARTMENT OF WATER RESOURCES
Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190
FAX (208) 334-2348

DIRK KEMPTHORNE
Governor
KARL J. DREHER
Director

December 26, 2005

Distribution to parties involved with pending water right application No.'s 63-32089 & 63-32090 (protested), in the name of the City of Eagle

RE: Test well drilling and pump test plan.

Dear interested party:

In response to issues discussed at a pre-hearing conference held October 18, 2005, the Idaho Department of Water Resources (Department) has reviewed the comments submitted relative to the proposed pump testing and construction of test wells by the City of Eagle. At the Department's request, Holladay Engineering Company has submitted a revised pump test plan in consideration of these comments.

Department hydrologists have reviewed the revised plan and find this plan acceptable. The Department has issued drilling permits for construction of two wells. One well is to be used as the pumping well for the test and the second to be used as an additional monitoring well completed in the same aquifer as the pumping well. The Department intends to closely monitor construction of these wells to assure proper completion and has required submittal of a final well completion plan after drilling and logging of the pilot holes. Additionally, the City of Eagle has agreed that periodic and final reports of the data collected during drilling and pump testing will be submitted to the Department.

Any questions concerning this matter should be directed to Rob Whitney of this office.

Respectfully,

John Westra

JOHN WESTRA
Manager, Western Region

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 27th day of December, 2005 a true and correct copy of the foregoing document was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

DANA & VIKI PURDY
5926 FLOATING FEATHER
EAGLE ID 83616

MICHAEL HEATH
NANCY HEATH
401 N PALMER LN
EAGLE ID 83616

JERRY & MARY TAYLOR
3410 HARTLEY
EAGLE ID 83616

EUGENE MULLER
320 N PALMER LN
EAGLE ID 83616

BILL FLACK
4035 HARTLEY RD
EAGLE ID 83616

TONY & BRENDA O'NEIL
1910 N MOUNTAIN VISTA LN
STAR ID 83669

DEAN & JAN COMBE
6440 W BEACON LIGHT
EAGLE ID 83616

JULIE FISCHER
WHITE PETERSON
5700 E FRANKLIN RD STE 200
NAMPA ID 83687

MIKE DIXON
RT 1 2650 WING RD
STAR ID 83669

AL SHOUSHTARIAN
1119 N EAGLE RD
EAGLE ID 83616

JOSEPH & LYNN MOYLE
C/O MICHAEL MOYLE
480 N PLUMMER RD
STAR ID 83669

TIM CHENEY
PO BOX 190027
BOISE ID 83719

CORRIN HUTTON
TERRY HUTTON
10820 NEW HOPE RD
STAR ID 83669

UNITED WATER ID INC
C/O SCOTT RHEAD
PO BOX 190420
BOISE ID 83719-0420

CHARLES MEISSNER JR
3101 N PALMER
EAGLE ID 83616

RONALD SCHREINER
2153 N POLLARD LN
STAR ID 83669

LEEROY & BILLIE MELLIES
6860 W STATE ST
EAGLE ID 83616

NORMA MARES
23966 BLESSINGER RD
STAR ID 83669-5016

SCOTT & NANCY REESER
499 N LINDER RD
EAGLE ID 83616

MICHAEL MCCOLLUM
1290 BUTTERFIELD
SAN ANSELMO CA 94960

BOB & ELSIE HANSON
4151 HARTLEY RD
EAGLE ID 83616

SAM & KARI ROSTI
1460 N POLLARD LN
STAR ID 83669

CHARLES HOWARTH
C/O GUNNER & MATT HOWARTH
833 N PALMER
EAGLE ID 83616

CITY OF STAR
C/O ROD LINJA
131 SW 5TH AVE STE A
MERIDIAN ID 83642

RALPH & BARBARA WILDER
7320 W STATE ST
EAGLE ID 83616

BRUCE SMITH
MOORE SMITH BUXTON TURKE
225 N 9TH STE 420
BOISE ID 83702

JERRY KISER
STOPPELLO & KISER
620 W HAYS
BOISE ID 83702

IDWR – WESTERN REGION
2735 AIRPORT WAY
BOISE ID 83705-5082

Sue Kreger

Sue Kreger, Administrative Assistant

HOLLADAY ENGINEERING CO.
ENGINEERS • CONSULTANTS
32 N. Main P.O. Box 235 Payette, ID 83661
(208) 642-3304 • Fax # (208) 642-2159

May 15, 2006

Mr. Rob Whitney
Western Regional Office
Idaho Department of Water Resources
2735 Airport Way
Boise, Idaho 83705-5082

Subject: Proposed Start Date and Modifications to the Approved 7-Day Aquifer Test for the City of Eagle, Applications for Water Appropriation 63-32089 and 63-32090
HECO NO. EG061204 and EG 013305

Dear Mr. Whitney,

We have completed construction of Test Well No. 1 (Legacy well) and Test Well No. 2 (Eaglefield well) and are ready to proceed forward with the 7-Day Aquifer Test under Application for Appropriation 63-32089 and 63-32090. We have scheduled the 7-Day Aquifer Test to start pumping on June 1, 2006 at 10:00 am.

We are proposing to make two changes to the Aquifer Test based on additional information gathered in the field. We propose to move the pumping well location from Test Well No. 1 (Legacy well) to Test Well No. 2 (Eaglefield well). The specific capacity test results for Test Well No. 1 shows the well does not have enough capacity to be pumped at 1,500 gpm for 7-days. The specific capacity chart for Test Well No. 1 is attached. As a result, we plan to use the Test Well No. 2 as the pumping well for the Aquifer Test. Preliminary test shows Test Well No. 2 has sufficient capacity to conduct the Aquifer Test at a pumping rate of 1,500 gpm for 7-days. Specific well capacity was calculated in the range of 80 gpm/ft with a measured static water level of 18.7 feet and artesian flow of approximately 1125 gpm.

The second proposed change to the Aquifer Test involves Monitoring Well No. 6 (Tom Ricks well). Permission to use this well has been withdrawn by Mr. Ricks. The City of Eagle is attempting to obtain monitoring access to the well. If access is not granted before June 1st, the well will be eliminated as a water level monitoring location for the test.

Eagle Exhibit 10

If you have questions or concerns, please contact me at 642-3304.

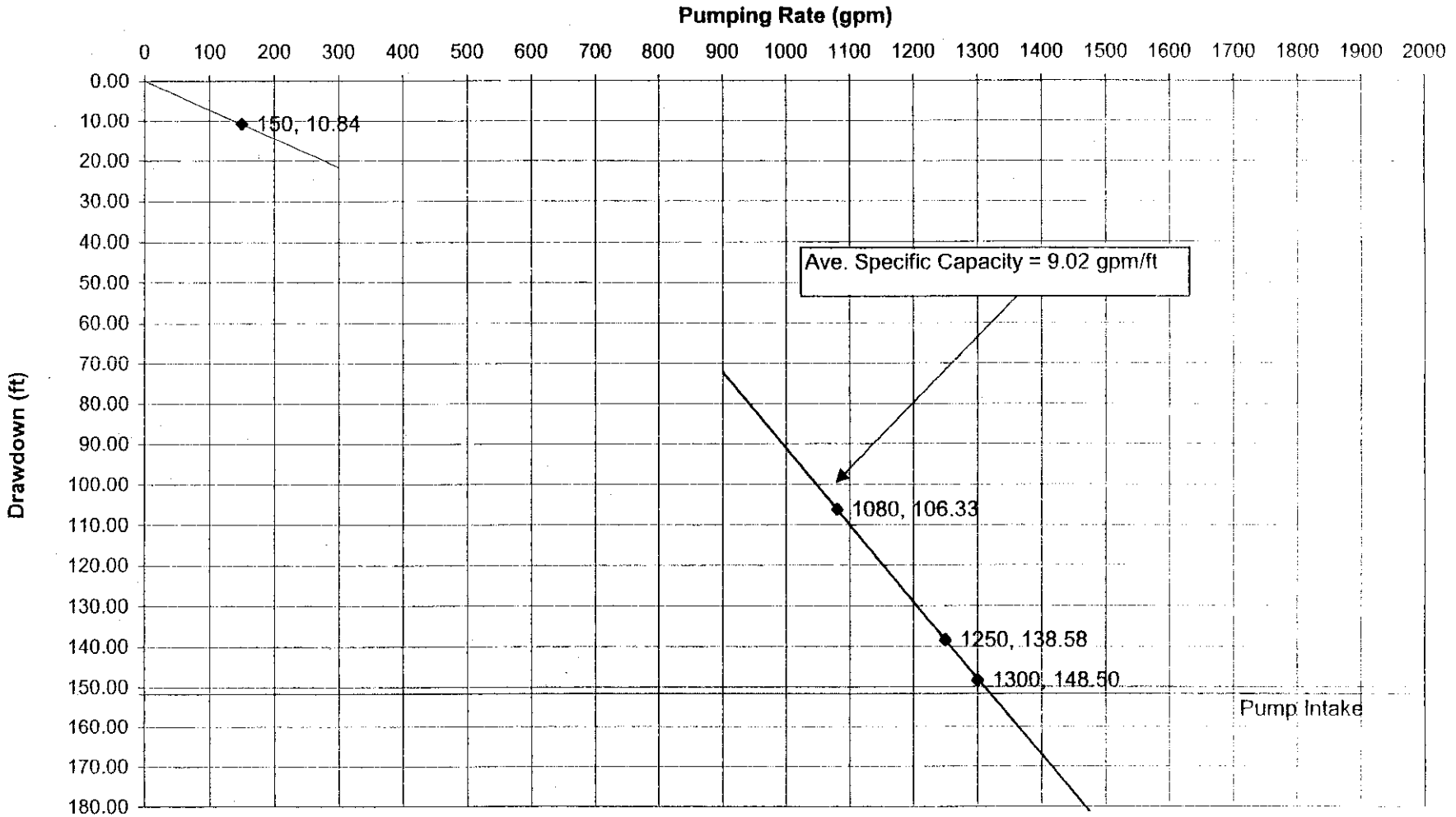
Sincerely,
HOLLADAY ENGINEERING COMPANY

By: _____
Chris Duncan, P.G.

cc: Mayor Merrill, City of Eagle
Bruce Smith, MSBT, City of Eagle Attorney
Jerry Kiser, Stoppello and Kiser, Star Water and Sewer Attorney

Attachment

STEP PUMP TEST of TEST WELL No. 1 (Legacy)
March 24th 9:15am to 2:30 pm
Specific Capacity



Printed 12/19/2005
Drilling Permit No. 837870
Well Tag No. D0042405
Well ID # 408297
Water Right No. 63-32090, 63-32089
Receipt # W033645
Approved Date 12/22/2005

Test Well No 2

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Relationship: Applicant
Name: CITY OF EAGLE
Address: PO BOX 1520
EAGLE ID 83616

Phone: (208)939-6813

Proposed Well Location: Township 04N, Range 01W, Section 11, NW, SE
COUNTY ADA Block 8 Sub Name WELL #2; LOTS 83 & 84, BLK 8, EAGLEFIELD ESTATES SUB

Street Address of Well Site: 50 FT W OF INTERSECTION OF W TATLOCK DR & N GOLDEN CROWN
EAGLE ID

Proposed Use of Well: Domestic-Public Water Supply
Municipal
Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 16 Inches. Proposed Depth 500 Feet.
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: Jan 03 2006

Anticipated Well Drilling Company: RIVERSIDE INC (No. 333)

Applicant's Signature: Orig. Appl. Attached Date 12-7-05

Title: _____

Eagle Exhibit 11

Well Tag No. D0041980

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Thursday, December 22, 2005.

1. A geophysical log shall be run in the pilot boring of this well to determine specific locations of permeable units and confining layers.
2. Final design and completion of this well shall be approved by IDWR based on actual geologic conditions encountered in the pilot bore.
3. If an annular slurry seal of bentonite is to be utilized, a high (>30%) solids bentonite shall be pumped from the bottom up to land surface. The bentonite shall not contain chemical polymers which effect long term stability of the seal (and are often found in drilling fluid grade bentonites) but shall be a bentonite which has been specifically recommended by the manufacturer for use as a seal material in water wells.
4. Aquifers with significantly different head, temperature or quality shall not be commingled.
5. The location at which this well is to be constructed must be at a site approved by the Idaho Department of Environmental Quality. The local Health District should also be contacted for septic tank/drain field locations. This well must not be drilled closer than 100 feet from any drain field or 100 feet from any septic tank.
6. All casing to be joined by welding shall have welds that are fully penetrating and at least as thick as the casing being joined. Both ends of casing joints shall be properly beveled and gapped to allow a fully penetrating root pass of E7018 or E6010 electrode. One or more additional passes are required to completely fill any remaining groove at the weld joint. Single-pass weld joints are not acceptable for joining steel casing.
7. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
8. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
9. Approval of this drilling permit does not authorize trespass on the land of another party.
10. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
11. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
12. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
13. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
14. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
15. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.

16. Pump testing of this well is limited to a quantity and duration specifically authorized by the Department and is included as an attachment to this drilling permit. Prior to diverting any water from this well the well owner shall execute and sign a Memorandum of Understanding (MOU) with the department.
17. Diversion and use of water from this well for purposes other than an approved pump test is not authorized unless the well owner has obtained a valid water right listing the well as a point of diversion.
18. Approval of this drilling permit does not suggest any intent by the Department to approve or process a water right application that would authorize use from this well.
19. This drilling permit is not valid and well construction shall not commence until a bond is secured by the well owner in favor of the director in a sufficient amount for proper abandonment of this well. The bond for this well shall be $15,000.
20. This drilling permit is approved for the construction of a "Production Test" well intended to be used for determining sufficiency of water supply and evaluating the effect of pumping on a regional or local aquifer system.
21. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well.
22. The uppermost unconfined aquifer shall be cased and sealed to exclude water from this zone from entering the well. All seals will be placed from the bottom up. Placement of any seal should be based upon actual geologic conditions encountered during drilling.
23. The project engineer or geologist will be on site during seal placement should any peculiarities arise which require further evaluation. Any alteration of the proposed well construction procedure shall be approved by the Department before it is undertaken.
24. The well owner hereby assumes all risks associated with constructing this well prior to obtaining a water right authorizing use from the well. This risk may include a directive by the Department to plug and abandon the well.
25. The screened, perforated, filter packed or otherwise open and commingled strata shall not exceed 25% of the total well depth as measured from the bottom of the open interval to the top of the open interval(s). If, however, through geophysical logging of the well (or other means), it can be demonstrated the aquifers to be produced from are under similar hydraulic head, temperature and quality and are not subject to waste or contamination, a greater open interval (screened or filter packed section) may be approved by the Department.
26. If an annular space of at least 4 inches greater than the outside diameter of the casing is provided, bentonite chips may be poured at the manufacturers recommended rate or no greater than 50 pounds in five minutes. The pour shall be presifted through 1/4 inch mesh screen to reduce the introduction of fines. The top of the seal shall be tagged at regular intervals, i.e. (30 ft. intervals) during placement with a sinker bar or other appropriate device to ensure the seal is reaching the intended depth. If bridging occurs, the Department shall be contacted immediately for evaluation.

Signature of Authorized Dept Representative

Title

Form 236-1
1/31/03

RECEIVED
DEC 0 8 2005
WATER RESOURCES
WESTERN REGION

RECEIVED
DEC 0 1 2005
WATER RESOURCES
WESTERN REGION

Drilling Permit No. 89a605-837870
Drilling Permit I.D. Tag No. D0042405
Water Right Permit No. 63-32089, 63-32090
Injection Permit No.

State of Idaho
Department of Water Resources

TEST WELL NO. 2
(EAGLEFIELD)

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): City of Eagle

2. Mailing Address: 310 E State St

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

3. Proposed Well Location: Twp. 4N Rge. 1W Sec. 11 ____ 1/4 NW 1/4 SE 1/4;

Gov't Lot No. ____ County Ada Lat. ____ : ____ : ____ Long. ____ : ____ : ____

Street Address of Well Site 50' W of intersection of W Tatlock Dr & N Golden Crown Wy City Eagle
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision Lots 83 & 84 Block 8 of Eaglefield Estates Subdivision

4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [X] Municipal [ ] Industrial
[ ] Livestock [X] Test [ ] Other PWS (Describe)
Type ____ Number Hd. ____

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells: ____

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 16 inch Proposed Maximum Depth 500 feet

C. Anticipated bottom hole temperature:
[X] 85 F or less (Cold Water Well)
[ ] 85 F to 212 F (Low Temp. Geo. Well)
[ ] 212 F. or more (Geothermal Well)

6. Construction Start Date: December 20, 2005

7. Anticipated Well Driller: Riverside, Inc Driller's Lic. No. 333
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: Stan Bastian Date December 7, 2005

Address (if different than owner): ____

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

Title: President, Eagle City Council
(Owner, Firm Representative, Other)

Prepared by Holladay Engineering Company

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit is _____. Date _____.

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one(1) year from the approval date for completion of the well unless an extension has been granted.

2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare, which may be required before construction of the well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.

3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.

4. Approval of this drilling permit does not authorize trespass on the land of another party.

5. This permit does not constitute other local, county, state or federal approvals, which may be required for construction of a well.

6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.

7. If a bottom hole temperature of 85 or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.

8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Department for reconsideration pursuant to Section 67-5243, Idaho Code.

10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.

SPECIFIC CONDITIONS:

_____ _____

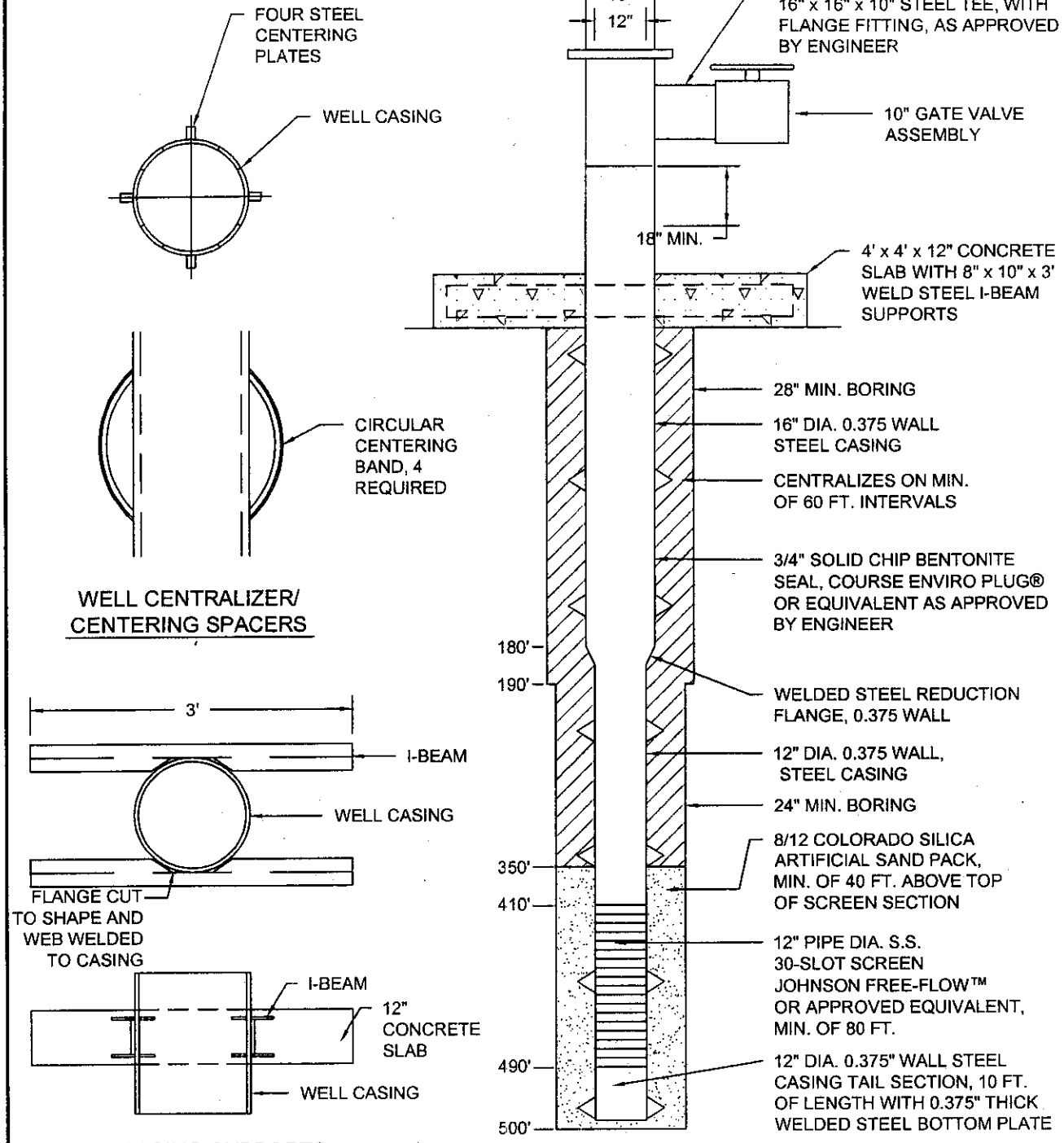
Signature of Authorized Department Representative Title

Receipt No. W033645 Receipted by DB Fee $200 - Date 12/1/05

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 FAYETTE, ID 83861
(208) 642-3304 · FAX (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 2
CITY OF EAGLE, IDAHO

JOB NO.	EG 061204
DATE	11/03/05
DRAWING	11/15/05
REVISED	11/15/05
DRAWN BY	JLJ
CHECKED BY	CHD

G:\Eg\061204\AQUIFER TEST\TESTWELL-1-REV2.dwg

Form 233-1 – Page 1 of 2
11/6/2000 (LDT)

Drilling Permit No. _____
Tag No. _____
Work Completion Date _____

Test Well No. 2

State of Idaho
Department of Water Resources

Cash Bond Pledge

To: WASHINGTON FEDERAL SAVINGS
(Bank or Savings and Loan Association)

Address of Bank or Savings & Loan association – Must be in Idaho

Street or PO Box 701 E STATE ST SUITE 100

City EAGLE, State Idaho, Zip Code ID 83616

FOR VALUE RECEIVED, I _____ do

Hereby assign, set over and pledge to the Director, Idaho Department of Water Resources (Director) as a cash bond, or cash deposit the sum of FIFTEEN THOUSAND dollars ($15,000.00) in an account carried in the name of

PETER HARRIS being Account No. 030-9406411.

This pledge is given in lieu of a Surety Bond to insure the construction, operation and maintenance of the well located in:

Township 4N, Range 1W, Section 11, ¼ NW ¼ SE ¼, County ADA;

Lot etc Block 8 Subdivision Name EAGLE FIELD

in compliance with Drilling Permit Conditions No. _____ of Permit No. _____, and the rules and regulations for well construction standards IDAPA 37.03.09, said pledge to remain in full force and effect until an approved water right is secured or until released in writing by the Director, whichever occurs first.

The interest paid on the account shall be paid to account holder PETER HARRIS this assignment and pledge being only for the principal amount.

Dated at Washington Federal this 28th day of December.

(Account Holder)

State of Idaho)
) ss
County of Ada)

On this 28th day of December, 2005, personally appeared before me the signer of the above instrument, who duly acknowledged to me that he he executed the same.

Barbara S. McDermott
Notary Public residing
at Eagle, Idaho

My commission expires: 5-10-08

BARBARA S. McDERMOTT NOTARY PUBLIC STATE OF IDAHO

Form 233-1 - Page 2 of 2
11/6/2000

I, Barbara McDermott (Name), Branch Manager (Title)

do hereby acknowledge that: Peter Harris

has an deposit fifteen thousand dollars ($ 15,000) which has been assigned to the Director, which shall remain in force and effect until released by the Director.

Barbara McDermott
(Bank or Savings and Loan Official)

State of Idaho)
) ss
County of Ada)

Acknowledged on this 28TH day of December 2005 before me:

SANDRA L. GEBHARD NOTARY PUBLIC STATE OF IDAHO

Sandra L. Gebhard
Notary Public residing

at Boise, ID

My commission expires: 7/21/10

Printed 12/19/2005
Drilling Permit No. 835987
Well Tag No. D0041980
Well ID # 406472
Water Right No. 63-32090, 63-32089
Receipt # W033412
Approved Date 12/22/2005

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Relationship: Applicant
Name: CITY OF EAGLE
Address: PO BOX 1520
EAGLE ID 83616

Phone: (208)939-6813

Proposed Well Location: Township 04N, Range 01W, Section 11, SE, NW
COUNTY ADA Sub Name WELL #1

Street Address of Well Site: QUARTER CIRCLE DJ RANCH; W OF LINDER RD
EAGLE ID

Proposed Use of Well: Domestic-Public Water Supply
Municipal
Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 16 Inches. Proposed Depth 550 Feet.
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: Jan 03 2006

Anticipated Well Drilling Company: RIVERSIDE INC (No. 333)

Applicant's Signature: Orig. Appl. Attached Date 9-9-05

Title: _____

Well ID # 406472

Well Tag No. D0041980

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Thursday, December 22, 2005.

1. A geophysical log shall be run in the pilot boring of this well to determine specific locations of permeable units and confining layers.
2. Final design and completion of this well shall be approved by IDWR based on actual geologic conditions encountered in the pilot bore.
3. If an annular slurry seal of bentonite is to be utilized, a high (>30%) solids bentonite shall be pumped from the bottom up to land surface. The bentonite shall not contain chemical polymers which effect long term stability of the seal (and are often found in drilling fluid grade bentonites) but shall be a bentonite which has been specifically recommended by the manufacturer for use as a seal material in water wells.
4. Aquifers with significantly different head, temperature or quality shall not be commingled.
5. The location at which this well is to be constructed must be at a site approved by the Idaho Department of Environmental Quality. The local Health District should also be contacted for septic tank/drain field locations. This well must not be drilled closer than 100 feet from any drain field or 100 feet from any septic tank.
6. All casing to be joined by welding shall have welds that are fully penetrating and at least as thick as the casing being joined. Both ends of casing joints shall be properly beveled and gapped to allow a fully penetrating root pass of E7018 or E6010 electrode. One or more additional passes are required to completely fill any remaining groove at the weld joint. Single-pass weld joints are not acceptable for joining steel casing.
7. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
8. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
9. Approval of this drilling permit does not authorize trespass on the land of another party.
10. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
11. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
12. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
13. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
14. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
15. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.

16. Pump testing of this well is limited to a quantity and duration specifically authorized by the Department and is included as an attachment to this drilling permit. Prior to diverting any water from this well the well owner shall execute and sign a Memorandum of Understanding (MOU) with the department.
17. Diversion and use of water from this well for purposes other than an approved pump test is not authorized unless the well owner has obtained a valid water right listing the well as a point of diversion.
18. Approval of this drilling permit does not suggest any intent by the Department to approve or process a water right application that would authorize use from this well.
19. This drilling permit is not valid and well construction shall not commence until a bond is secured by the well owner in favor of the director in a sufficient amount for proper abandonment of this well. The bond for this well shall be $15,000.
20. This drilling permit is approved for the construction of a "Production Test" well intended to be used for determining sufficiency of water supply and evaluating the effect of pumping on a regional or local aquifer system.
21. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well.
22. The uppermost unconfined aquifer shall be cased and sealed to exclude water from this zone from entering the well. All seals will be placed from the bottom up. Placement of any seal should be based upon actual geologic conditions encountered during drilling.
23. The project engineer or geologist will be on site during seal placement should any peculiarities arise which require further evaluation. Any alteration of the proposed well construction procedure shall be approved by the Department before it is undertaken.
24. The well owner hereby assumes all risks associated with constructing this well prior to obtaining a water right authorizing use from the well. This risk may include a directive by the Department to plug and abandon the well.
25. The screened, perforated, filter packed or otherwise open and commingled strata shall not exceed 25% of the total well depth as measured from the bottom of the open interval to the top of the open interval(s). If, however, through geophysical logging of the well (or other means), it can be demonstrated the aquifers to be produced from are under similar hydraulic head, temperature and quality and are not subject to waste or contamination, a greater open interval (screened or filter packed section) may be approved by the Department.
26. If an annular space of at least 4 inches greater than the outside diameter of the casing is provided, bentonite chips may be poured at the manufacturers recommended rate or no greater than 50 pounds in five minutes. The pour shall be presifted through 1/4 inch mesh screen to reduce the introduction of fines. The top of the seal shall be tagged at regular intervals, i.e. (30 ft. intervals) during placement with a sinker bar or other appropriate device to ensure the seal is reaching the intended depth. If bridging occurs, the Department shall be contacted immediately for evaluation.

John F Nesta — Signature of Authorized Dept Representative

Western Regional Manager — Title

Form 235-1
1/31/03

RECEIVED
SEP 13 2005
WATER RESOURCES
WESTERN REGION

Drilling Permit No. 8C 1994-835987
Drilling Permit I.D. Tag No. DC041980
Water Right Permit No. 63-32089, 63-32090
Injection Permit No. _____

State of Idaho
Department of Water Resources

~~TEST~~ WELL NO. 1

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): City of Eagle

2. Mailing Address: PO Box 1520

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

3. Proposed Well Location: Twp. 4N, Rge. 1W, Sec. 11, ____ 1/4 SE 1/4 NW 1/4;

Gov't Lot No. _____ County Ada Lat. ____:____:____ Long. ____:____:____

Street Address of Well Site Quarter Circle DJ Ranch, West of Linder Rd City Eagle
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision _____

4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Livestock [X] Test [ ] Other _____
Type____ Number Hd.___ (Describe)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells: _____

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 16 inch Proposed Maximum Depth 550 feet

C. Anticipated bottom hole temperature:
[X] 85 F or less (Cold Water Well)
[ ] 85 F to 212 F (Low Temp. Geo. Well)
[ ] 212 F. or more (Geothermal Well)

6. Construction Start Date: September 26, 2005

7. Anticipated Well Driller: Riverside Inc. Driller's Lic. No. 333
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: Norman F. Gennett Date 9-9-05

Address (if different than owner): _____

City: Eagle City State ID Zip Code: _____ Telephone _____

Title: Mayor
(Owner, Firm Representative, Other)

Prepared by Holladay Engineering Co., City Engineer

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit is _____. Date _____.

, approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one(1) year from the approval date for completion of the well unless an extension has been granted.

2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare, which may be required before construction of the well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.

3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.

4. Approval of this drilling permit does not authorize trespass on the land of another party.

5. This permit does not constitute other local, county, state or federal approvals, which may be required for construction of a well.

6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.

7. If a bottom hole temperature of 85 or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.

8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Department for reconsideration pursuant to Section 67-5243, Idaho Code.

10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.

SPECIFIC CONDITIONS:

_____ _____

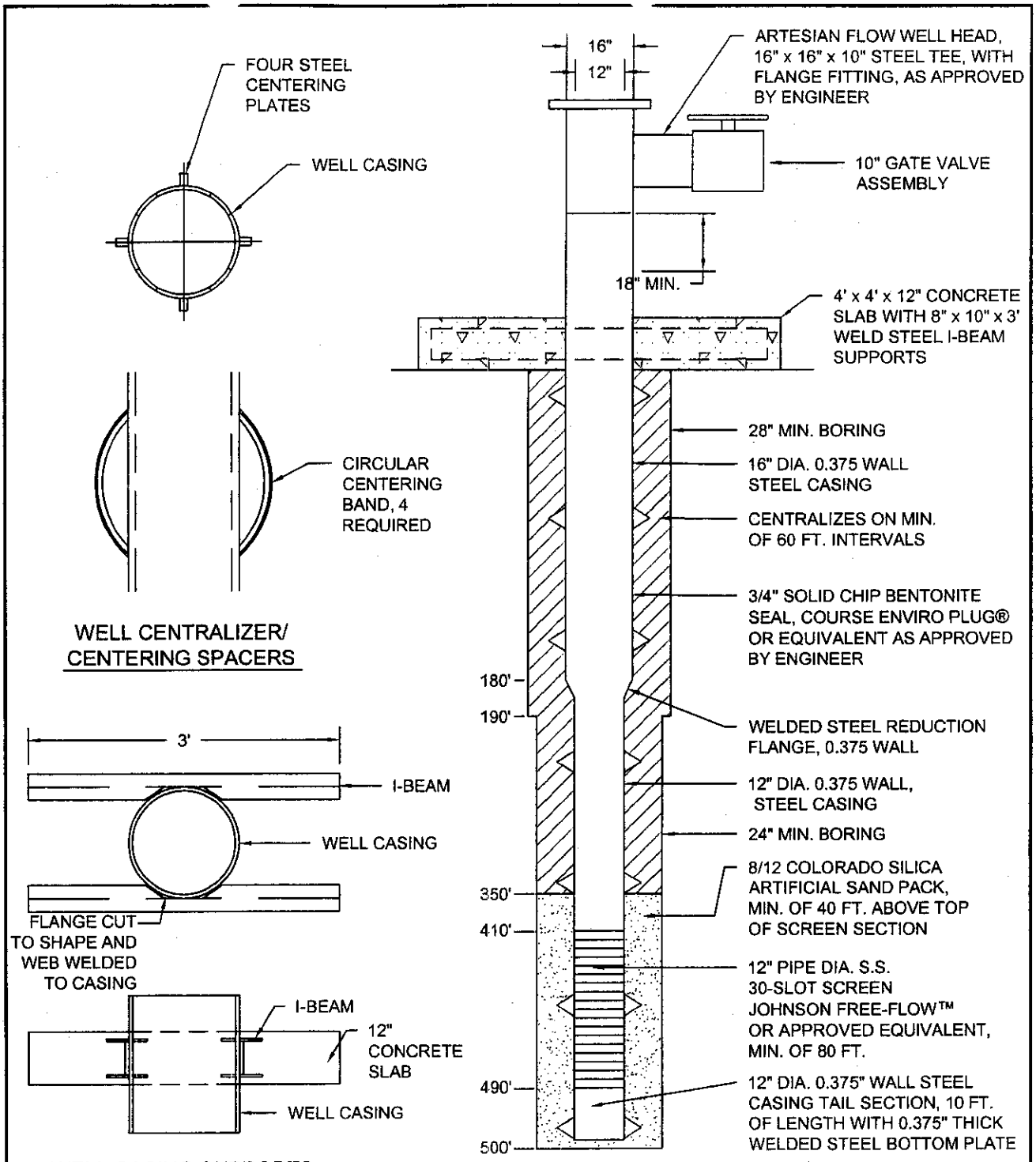
Signature of Authorized Department Representative Title

Receipt No. W033412 Receipted by AK Fee 200.00 Date 9-13-05

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

REGISTERED PROFESSIONAL GEOLOGIST
CHRIS H. DUNCAN
1046
STATE OF IDAHO

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 FAX (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO.	EG 061204
DATE	11/03/05
PLOTTED	11/15/05
REVISED	11/15/05
DRAWN BY	JLJ
CHECKED BY	CHD

G:\Eg\061204\AQUIFER TEST\TESTWELL-1-REV2.dwg

Form 233-1 – Page 1 of 2
11/6/2000 (LDT)

Drilling Permit No. 835987
Tag No. D0041980
Work Completion Date

RECEIVED

DEC 23 2005

WATER RESOURCES
WESTERN REGION

Test Well No. 1

State of Idaho
Department of Water Resources

Cash Bond Pledge

To: Farmers & Merchants State Bank
(Bank or Savings and Loan Association)

Address of Bank or Savings & Loan association – Must be in Idaho

Street or PO Box 4128 Adams St

City Boise, State Idaho, Zip Code 83714

FOR VALUE RECEIVED, I Thomas Stevenson do

Hereby assign, set over and pledge to the Director, Idaho Department of Water Resources (Director) as a cash bond, or cash deposit the sum of Fifteen Thousand and No/100 dollars ($ 15,000.00) in an account carried in the name of Eagle Sport Legends Dev., LLC being Account No. 5201524301.

This pledge is given in lieu of a Surety Bond to insure the construction, operation and maintenance of the well located in:

Township 4N, Range 1W, Section 11, ¼ SE ¼ NW ¼, County ADA;

Lot _____ Block _____ Subdivision Name _____

in compliance with Drilling Permit Conditions No. _____ of ~~Permit~~ Tag No. D0041980, and the rules and regulations for well construction standards IDAPA 37.03.09, said pledge to remain in full force and effect until an approved water right is secured or until released in writing by the Director, whichever occurs first.

The interest paid on the account shall be paid to account holder Eagle Sport Legends Dev., LLC, this assignment and pledge being only for the principal amount.

Dated at 2:00 pm this 22nd day of December, 2005.

x _____
(Account Holder)

State of Idaho)
) ss
County of Ada)

On this 22nd day of December, 2005, personally appeared before me the signer of the above instrument, who duly acknowledged to me that he be executed the same.

KEVIN E. SMITH
NOTARY PUBLIC
IDAHO

_____
Notary Public residing

at Meridian, ID

My commission expires: 12/28/2010

I, Kevin Smith (Name), AVP & Commercial Loan Officer (Title)

do hereby acknowledge that Eagle Sport Legends Dev., LLC has on deposit Fifteen Thousand dollars ($ 15,000.00) which has been assigned to the Director, which shall remain in force and effect until released by the Director.

(Bank or Savings and Loan Official)

State of Idaho)
)ss
County of Ada)

Acknowledged on this 22nd day of December, 2005, before me:

CHANTAYN WINNER NOTARY PUBLIC STATE OF IDAHO

Notary Public residing at Boise, ID

My commission expires: 9-24-2007

Form 233-1 – Page 1 of 2
11/6/2000 (LDT)

Drilling Permit No. _____
Tag No. _____
Work Completion Date _____

Test Well No. 2

State of Idaho
Department of Water Resources

Cash Bond Pledge

To: WASHINGTON FEDERAL SAVINGS
(Bank or Savings and Loan Association)

Address of Bank or Savings & Loan association – Must be in Idaho

Street or PO Box 701 E STATE ST SUITE 100

City EAGLE, State Idaho, Zip Code ID 83616

FOR VALUE RECEIVED, I _____ do

Hereby assign, set over and pledge to the Director, Idaho Department of Water Resources (Director) as a cash bond, or cash deposit the sum of FIFTEEN THOUSAND dollars ($15,000.00) in an account carried in the name of

PETER HARRIS being Account No. 030-9406411.

This pledge is given in lieu of a Surety Bond to insure the construction, operation and maintenance of the well located in:

Township 4N, Range 1W, Section 11, ¼ NW ¼ SE ¼, County ADA;

Lot etc Block 8 Subdivision Name EAGLE FIELD

in compliance with Drilling Permit Conditions No. _____ of Permit No. _____, and the rules and regulations for well construction standards IDAPA 37.03.09, said pledge to remain in full force and effect until an approved water right is secured or until released in writing by the Director, whichever occurs first.

The interest paid on the account shall be paid to account holder PETER HARRIS, this assignment and pledge being only for the principal amount.

Dated at Washington Federal this 28th day of December.

(Account Holder)

State of Idaho)
) ss
County of Ada)

On this 28th day of December, 2005, personally appeared before me the signer of the above instrument, who duly acknowledged to me that he he executed the same.

Notary Public residing at Eagle, Idaho

My commission expires: 5-2008

BARBARA S. McDERMOTT NOTARY PUBLIC STATE OF IDAHO

Form 213-1 - Page 2 of 2
11/6/2000

I, Barbara McDermott (Name), Branch Manager (Title)

do hereby acknowledge that Paker Harris

has an deposit fifteen thousand dollars ($ 15,000) which has been assigned to the Director,
which shall remain in force and effect until released by the Director.

Barbara McDermott
(Bank or Savings and Loan Official)

State of Idaho)
) ss
County of Ada)

Acknowledged on this 28th day of December, 2005 before me:

SANDRA L. GEBHARD NOTARY PUBLIC STATE OF IDAHO

Sandra L. Gebhard
Notary Public residing

at Boise, ID

My commission expires: 7/21/10

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 N. Orchard • Boise Idaho 83706 • (208) 373-0550

Dirk Kempthorne, Go
Toni Hardesty, D

December 20, 2005

Todd Santiago
Eagle Sports Development LLC
533 E Riverside Dr Suite 200
Eagle, ID 83616

RE: Eagle Test Well No.1 (Eagle Sports Development) – P.W.S. No. 4010201(Eagle, Ada County)

A. Well Site Conditional Approval
B. Groundwater Under Direct Influence of Surface Water (GWUDI) Determination
C. Future Federal Regulations

Dear Mr. Santiago:

I. WELL SITE CONDITIONAL APPROVAL

Your consultant has submitted the required information on the well site and has certified that the site is generally acceptable for a new Public Water System well. We have reviewed that information and are approving the site per the *Idaho Rules for Public Drinking Water Systems* (IRPDWS), Section 550.03.n, subject to the following conditions:

II. STANDARD CONDITIONS

A. The approval is for the well site only. Construction of the well, pumphouse, and distribution system components cannot begin until plans and specifications are approved by the Department of Environmental Quality (DEQ). The plans, specifications, and related documents will have to verify and augment the data provided in the initial Well Site Evaluation, ensuring full conformance to the IRPDWS. The design package needs to include at least the following:

1. General Checklist.
2. Water System Checklist.
3. Documentation showing the well lot is owned in fee simple or controlled by a lease (IRPDWS 550.03.m).
4. Well logs from nearby wells (used to determine approximate depth of the well seal).
5. Well schematic and specifications for drilling and disinfection.
6. Other items required per the checklists.
7. Other site specific items deemed appropriate by the consultant.
8. An evaluation of how disinfection and contact time would be installed, should that prove necessary (please see Item A below).

DEQ will conduct a concurrent review with Idaho Department of Water Resources (IDWR); we recommend that your engineer contact IDWR early regarding the well design and drilling program. The IDWR contact is Rob Whitney at 334-2190.

B. To assist you in obtaining a timely review of this project, please avoid the following errors that have been found in recent plans, specifications, and related documents:

1. Improper separation distances between the well and pavement, property lines, and public easements.
2. Failure to divert runoff as far from the wellsite as practical (minimum of 50 feet).
3. Improper use of the well site for parking and storage of inappropriate materials (petroleum products, chemicals, etc).

C. New source monitoring will need to be collected by the owner, tested by a certified laboratory, and approved by DEQ; before the water may be distributed to the public. The detailed list of parameters that need to be tested will be forwarded when the well construction is approved.

D. This approval will be voided if: 1) construction is not completed by December 20, 2006; 2) the project is improperly constructed, operated, or maintained; or 3) the project fails to function as intended.

D. No significant deviations can be made from the approved plans without DEQ's prior written approval.

III. GROUNDWATER UNDER DIRECT INFLUENCE OF SURFACE WATER (GWUDI)

Idaho is required by federal drinking water regulations to determine whether groundwater sources serving public drinking water systems are directly influenced by surface water. "Groundwater Under the Direct Influence of Surface Water" (GWUDI) may contain disease causing organisms which are normally found only in surface water, and may require additional treatment including filtration and/or disinfection and contact time.

From our review of the materials submitted for this project, we have classified this source as:

☐	**"Groundwater"**	No further action is necessary
☒	**"Potentially Groundwater Under Direct Influence of Surface Water"**	Although unlikely, this source could be shown in the future to be vulnerable to biological contamination. In that case, treatment and additional monitoring requirements would be necessary to protect public heath.

☐	**"Groundwater Under Direct Influence of Surface Water".**	This source is subject to biological contamination and treatment is required as discussed below:

Please call Brandon Lowder of this office 373-0550 with any questions on the classification.

IV. COMMENTS FOR YOUR CONSIDERATION

You should be aware that future federal regulations could affect the design and operation of water systems utilizing groundwater sources.

A. The proposed "Groundwater Disinfection Rule" will evaluate groundwater sources that are not under the direct influence of surface water, for vulnerability to microbial contamination. If a source is found to be vulnerable, it may be necessary to install disinfection and contact time prior to distribution to the first customer. To provide for that possibility, the planning and layout of the facility needs to include an evaluation of the how the system could be modified to supply an equivalent 30 minute contact time with a minimum residual of 0.2 parts per million of free chlorine.

B. The proposed "Disinfectants-Disinfection By-Products Rule" will regulate certain compounds that are formed when disinfectants combine with certain naturally occurring, organic constituents in water. Both these rules are still under development and are subject to change.

Please call me with any questions at (208) 373-0514 or via e-mail at Sondra.Miller@deq.idaho.gov

Sincerely,

Sondra M. Miller, Ph.D. E.I.T.
Associate Engineer

SMM:vee: G:\Engineering\Sondra\Approval Letters\Wells\Eagle Test Well No. 1\APR Eagle Test Well No. 1-Well Site Evaluation-20Dec05.doc

cc: Charles W. Ariss, P.E., Regional Engineering Manager, Boise Regional Office
Michael E. Holladay, P.E., Holladay Engineering Co.
Chris Duncan, P.G., Holladay Engineering Co.
Rob Whitney,.IDWR-Boise Field Office
Source File 1 Eng. Eagle Test Well No.1 (Eagle Sports Development), Manager's File, Reading File

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 N. Orchard • Boise, Idaho 83706 • (208) 373-0550

Dirk Kempthorne, Governor
Toni Hardesty, Director

December 20, 2005

Todd Santiago
Eagle Sports Development LLC
533 E Riverside Dr Suite 200
Eagle, ID 83616

RE: Eagle Test Well No.1 (Eagle Sports Development) – P.W.S. No. 4010201 (Eagle, Ada County)

A. Well Conditional Approval
B. Groundwater Under Direct Influence of Surface Water (GWUDI) Determination
C. Future Federal Regulations

Dear Mr. Santiago:

The plans and specifications for the subject project appear to meet State of Idaho standards and are conditionally approved as noted below

I. STANDARD CONDITIONS

A. The standard conditions on the Department of Environmental Quality (DEQ) review stamp are part of this approval. Supporting reports or documents are considered to be part of the approved documents.

B. No work may begin until a copy of this approval letter and the approved plans and specifications are delivered to and kept on the job site. Approval conditions must be met and you, as the project owner, must ensure that the contractor, inspecting, and certifying engineer are aware of these conditions.

C. This approval will be voided if: 1) construction is not completed by December 20, 2006; 2) the project is improperly constructed, operated, or maintained; or 3) the project fails to function as intended.

D. No significant deviations can be made from the approved plans without DEQ's prior written approval.

E. Per the project documents, the Land Developer or Owner or his representative shall ensure that a professional engineer with Holladay Engineering Co. provides supervision of construction and written documentation as follows.

F. Within thirty days (30) after completion of construction, the Land Developer or Owner or his representative shall provide DEQ with one of the following documents.

G. The *Application For Drilling Permit* from IDWR contains conditions that are an essential part of the subject plans and specifications. A copy of the *Application For Drilling Permit* and the DEQ approved plans and specification must be maintained at the drill site.

H. The project engineer must stake where the well will be drilled in accordance with the DEQ approved well site plan.

I. Before drinking water may be distributed to the public:

1. Water samples must be collected and tested by a certified laboratory. Testing shall include the parameters on the attached list. Those results must be sent to the Drinking Water Compliance section of this office for review and approval. We will be advised when that process is complete.

2. Documentation that the project was completed as approved must be submitted to me for review and approval. We will advise you if a sanitary survey will be conducted before the water may be distributed to the public.

J. The approval applies to the drilling of the well only. Separate plans and specifications for the pump, pump house, and appurtenances must be approved by DEQ prior to construction. The design package needs to include at least the following:

1. General Plan and Specification Review Checklist
2. Well House and Equipment Design Checklist
3. Water System Checklist.
4. Other DEQ checklists as needed; other items per state rules, or standards; or site specific items deemed appropriate by the consultant.
5. An evaluation of how disinfection and contact time would be installed, should that prove necessary.

K. New source monitoring will need to be collected by the owner, tested by a certified laboratory, and approved by DEQ; before the water may be distributed to the public. A detailed list of parameters that need to be tested is attached.

II. PROJECT SPECIFIC CONDITIONS

A. The well shall be test pumped in accordance with the *Idaho Rules for Public Drinking Water Systems* (IRPDWS), IDAPA 58.01.08.550.03.f.

B. All construction and materials shall be in conformance with the 2005 edition of the *Idaho Standards for Public Works Construction* (ISPWC).

C. The well shall be decontaminated in accordance with AWWA C654-03.

D. In accordance with the *Idaho Rules for Public Drinking Water Systems* (IRPDWS), IDAPA 58.01.08.554, owners of all community public drinking water systems must place in direct control of that system an operator licensed at the appropriate level. Please provide with the Well Completion Report documented proof of licensure for the individual who will operate and maintain this system. A worksheet to aid in determining the appropriate operator license requirement can be found at http://www.idahocertificationtraining.com/index.htm.

III. GROUNDWATER UNDER DIRECT INFLUENCE OF SURFACE WATER (GWUDI)

Idaho is required by federal drinking water regulations to determine whether groundwater sources serving public drinking water systems are directly influenced by surface water. "Groundwater Under the Direct Influence of Surface Water" (GWUDI) may contain disease causing organisms which are normally found only in surface water, and may require additional treatment including filtration and/or disinfection and contact time.

From our review of the materials submitted for this project, we have classified this source as:

☐	**"Groundwater"**	No further action is necessary
☒	**"Potentially Groundwater Under Direct Influence of Surface Water"**	Although unlikely, this source could be shown in the future to be vulnerable to biological contamination. In that case, treatment and additional monitoring requirements would be necessary to protect public heath.
☐	**"Groundwater Under Direct Influence of Surface Water".**	This source is subject to biological contamination and treatment is required as discussed below:

Please call Brandon Lowder of this office 373-0550 with any questions on the classification.

IV. COMMENTS FOR YOUR CONSIDERATION

You should be aware that future federal regulations could affect the design and operation of water systems utilizing groundwater sources.

A. The proposed "Groundwater Disinfection Rule" will evaluate groundwater sources that are not under the direct influence of surface water, for vulnerability to microbial contamination. If a source is found to be vulnerable, it may be necessary to install disinfection and contact time prior to distribution to the first customer. To provide for that possibility, the planning and layout of the facility needs to include an evaluation of the

how the system could be modified to supply an equivalent 30 minute contact time with a minimum residual of 0.2 parts per million of free chlorine.

B. The proposed "Disinfectants-Disinfection By-Products Rule" will regulate certain compounds that are formed when disinfectants combine with certain naturally occurring, organic constituents in water. Both these rules are still under development and are subject to change.

Please call me with any questions at (208) 373-0514 or via e-mail at Sondra.Miller@deq.idaho.gov

Sincerely,

Sondra M. Miller, Ph.D. E.I.T.
Associate Engineer

SMM:vee: G:\Engineering\Sondra\Approval Letters\Wells\Eagle Test Well No. 1\APR Eagle Test Well No. 1-Well Construction-20Dec05.doc

Enclosures: One Set(s) of Approved and Stamped Specifications
New Source Monitoring Requirements for Community Public Drinking Water Systems

cc: Charles W. Ariss, P.E., Regional Engineering Manager, Boise Regional Office
Michael E. Holladay, P.E., Holladay Engineering Co.
Chris Duncan, P.G., Holladay Engineering Co.
Rob Whitney,.IDWR-Boise Field Office
Source File 1 Eng, Eagle Test Well No.1 (Eagle Sports Development), Manager's File, Reading File

EAGLE SPORTS DEVELOPMENT, LLC

SPECIFICATIONS
FOR

Eagle Test Well No. 1
City of Eagle P.W.S. No. 4010201

HECO Ref. No. EG 061204

November 2005

Prepared By

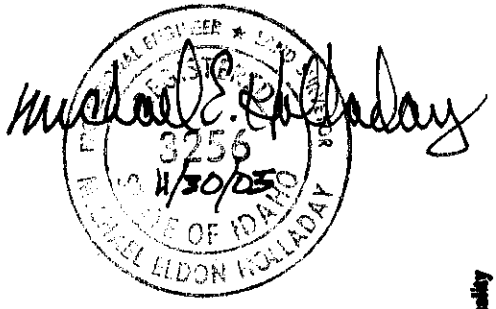
Holladay Engineering Company
Payette, ID

EAGLE SPORTS DEVELOPMENT, LLC

SPECIFICATIONS
FOR

Eagle Test Well No. 1
City of Eagle P.W.S. No. 4010201

HECO Ref. No. EG 061204



November 2005

Prepared By

Holladay Engineering Company
Payette, ID

State of Idaho • Department of Environmental Quality
Boise Regional Office
PLANS & SPECIFICATIONS REVIEW

These plans and/or specifications have been reviewed for compliance with Department of Environmental Quality rules. This review does not relieve the owner, engineer, or the contractor of the responsibility to design or construct these facilities in compliance with all current applicable federal, state and local laws, rules, regulations, or ordinances. Plans and/or specifications must be resubmitted for review if construction is not completed within one year from approval date.

Reviewing DEQ Engineer — Approval Date 12DEC05

Refer to approval conditions in letter to: TODD SANTIAGO

HOLLADAY ENGINEERING CO.
ENGINEERS • CONSULTANTS
32 N. Main P.O. Box 235 Payette, ID 83661
(208) 642-3304 • Fax # (208) 642-2159

November 29, 2005

Mr. Mike McGown, Administrator
Department of Environmental Quality
Boise Regional Office
1445 N. Orchard, Suite 100
Boise, ID 83706

RE: Well Site Evaluation and Well Construction Design Check List, City of Eagle Test Well No. 1, Eagle Sports Development, LLC
HECO No. EG 061204

Dear Mr. McGown:

Eagle Sports Development, LLC is submitting plans and specifications for the City of Eagle Test Well No. 1 located in the NW ¼ of the SE ¼ of Section 11, T. 4N, R.1E. As discussed at our at our November 8, 2005 meeting, Test Well No. 1 will be constructed to perform a large-scale aquifer test as part of water right applications 63-32089 and 63-32090. The aquifer test requires a new production well capable of meeting a sustained production rate of 1,500 gpm, as ordered by the Department of Water Resources. In early 2006, Eagle Sports Development will convey the well to the City of Eagle under a prior agreement for use as a municipal production well in the City of Eagle western expansion area public water system. The City of Eagle is seeking approval of the well and well site in advance of final design of the western expansion area water system.

Enclosed are plans and specifications for the well construction portion of the project. Additional plans and specification will be submitted covering the well house and water distribution system.

The following documents are included in this packet:

- General Plan and Specification Review Checklist
- Well Site Evaluation Checklist
- Well Construction Design Checklist
- Plans and Specifications for Test Well No. 1 with bid form and well design drawing

General Plan and Specification Review Checklist

The following narrative is provided for the general plan and specification checklist:

B. 8. The public water system is the City of Eagle municipal water system, PWS No. 4010201

C. 1. b. The City of Eagle Test Well No. 1 project is a joint project between Eagle Sports Development, LLC and the City of Eagle. The well be constructed by Eagle Sports Development, LLC and conveyed to the City of Eagle under an existing agreement.

C. 1. c. The well site is has been identified as a well lot on to be incorporated into the preliminary plat map, under an existing agreement with the City. At this time, the preliminary plat map is being developed. The preliminary Plat map will include a dedicated 100 by 100 foot well lot and conditioned to Public Water System requirements. The well lot will be reviewed by the City Engineer for Public Water System compliance prior to Council approval of the preliminarily plat map.

C. 2. c. Groundwater produced from the pump test will be disposed into the Quarter Circle D. J. Ranch surface water irrigation system.

C. 2. f. Land owner has contracted with Holladay Engineering and drilling contractor. The drilling permit and water right approval is pending.

D. 3. The standards and specifications used for this well construction project include the current IDAPA 58.01.08 Idaho Rules for Public Drinking Water Systems, IDAPA 37.03.09 Well Construction Standards Rules, ANSI/AWWA A100-97 standards for water wells, Recommended Standards for Water Works, 2003 Edition, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Mangers, and Idaho Standards of Public Works Construction (2003).

E. . Not applicable.

F. Not applicable.

Well Site Evaluation

The following narrative is provided for the well site evaluation checklist under Item 4:

A. A vicinity map is attached showing the location of the proposed well.

B. The well site will be conveyed to the City of Eagle as dedicated well lot for public water system use under a prior agreement.

C. The site access for a drilling rig is good.

D. The well site is located outside of the FEMA floodway and 100 year floodplain.

E. The surrounding land use is a residential golf course development.

F. The anticipated production rate is 1500 gallons per minute.

G. The several well logs are provided to show soils and subsurface lithology.

H. The anticipated depth of screens will be 410 to 490 feet. The depth of the annular seal will be 350 feet. The seal will be constructed with poured ¾ inch bentonite chip in 6-inch annular between the boring and well casing.

I. The ground water quality is good in the deep aquifer zone, based on the water quality analysis performed on UWI Redwood Creek well. The well site is located southeast of a known area of shallow groundwater contamination with elevated nitrate. The nitrate contamination plume in shallow aquifer (exceeding the Drinking Water MCL) is located approximately 1.25 miles to the northwest.

J. There are a limited number of wells within located within a 1/2-mile of the proposed well site. These wells appear to be shallow domestic wells, with exception of two deeper irrigation wells located on the Quarter Circle D. J. Ranch. Proposed Test Well No. 1 will be completed lower Treasure Valley Aquifer zone. Significant clay units exist between the shallow water table aquifer, intermediate aquifer zones and the lower Treasure Valley aquifer where the well will be completed. The lower aquifer is characterized as a semi-confined to confined aquifer with artesian head pressures in the range of 14.5 feet, compared to the shallow aquifer with unconfined water table conditions.

K. To our knowledge, there is no aquifer recharge or injection wells within one mile of the proposed well, based on IDWR database records.

L. The City of Eagle is in the process of developing a wellhead protection plan for the municipal water system. The well will be constructed by Eagle Sports Development, LLC through a private contract with a licensed driller and conveyed to the City of Eagle Public Water under a prior agreement. Engineering oversight shall be provided by the City Engineer, Holladay Engineering Co. The City will operate and maintain the site as part of the public water system and limit the potential for contamination through the City engineering review process. The proposed well will be completed in the Lower Treasure Valley Aquifer, which is isolated or indirectly influenced by land use practices occurring in the area. Significant clay units exist between the shallow water table aquifer and the lower aquifer where the well will be completed. The lower aquifer shows semi-confined to confined conditions with higher head pressures compared to the shallow aquifer with unconfined water table conditions.

M. The potential is low for the proposed well to be "Groundwater Under the Direct Influence of Surface Water". The well is located more than 500 feet from a surface water body.

N. The site was selected prior to construction of the subdivision. The water distribution system will be designed and constructed to accommodate the well located at this predetermined site. Other well sites have been considered and are listed on the IDWR application for water appropriation 63-32089 and 63-32090. This site was selected based favorable hydrogeologic conditions in the area, distance from surrounding wells and distance from shallow groundwater nitrate contamination.

O. This site is anticipated to be suitable for a public water supply.

The following narrative is provided for the well site evaluation checklist site map items:

A. The vicinity map is enclosed for your review.

B. The inferred direction of ground water flow is to the southwest.

C. There are no known potential sources of contamination within 500 feet of the proposed well. The location of sewer lines and storm water disposal systems will be reviewed and controlled through the City of Eagle preliminary plat process.

D. The wellhead will be located 50 feet from lot lines and structures, except for the proposed well house. Surrounding land use will reviewed and controlled through the City of Eagle preliminary plat process and will not occur within 100 feet of the well.

E. There are no surface waters, including canals and ditches within 50 feet of the wellhead.

F. The land elevation at the well site will be graded, elevated (minimum of 1-foot) and sloped in a radial direction away from the wellhead.

G. There are no septic tanks, drain fields, or sewer lines within 50 feet of the wellhead. The Legacy Subdivision will have sewer service.

H. There will be no storm waters, storm drains, irrigation, and other non-potable mains and service lines located within 50 feet of the wellhead. The location of sewer lines and storm water disposal systems will be reviewed and controlled through the City of Eagle preliminary plat process.

I. There are no other buried utilities within 50 feet of the wellhead, except the public water system. The location of buried utilities will be reviewed and controlled through the City of Eagle preliminary plat process.

J. There is no sub-surface storm water disposal or wastewater ponds within 100 feet of the proposed wellhead. The location of subsurface disposal and wastewater ponds will be reviewed and controlled through the City of Eagle preliminary plat process.

K. There are no injection wells in the area to our knowledge.

L. There are no fuel tanks within 50 feet of the wellhead.

M. There will be only authorized road to access to the well.

N. There are no buildings within 50 feet of the wellhead, except for the proposed well house containing public water system works.

O. There are no livestock within 50 feet of the wellhead.

P. There are no potential sources of contamination known to exist within 50 feet of the wellhead.

Well Construction Design Evaluation

The following narrative is provided for specific items of the well construction design checklist:

III. Administrative Requirements

B. The applications for water appropriation (63-32089 and 63-32090) have been protested and approval is pending. The well will be constructed initially as test well for a large-scale aquifer test to support the approval of the applications for water appropriation. Following the aquifer test, the well will be decommissioned until the City receives a water right permit to divert groundwater.

C. An IDWR application for Drilling permit was submitted and approval is pending.

D. DEQ approval of the well site is pending.

X. Filter Pack

B. Screen seal will be welded joints in a single string well assembly.

XII. Final Production Tests

B. Pump test and duration proposed is at 1,500 gpm for a duration of 7-days and will completed as part of a large-scale aquifer test.

D. Water quality will be sampled by Engineer and analyzed according to State and Federal Drinking Water Standards using EPA methods. Water quality analysis will be reported to DEQ as part of the well completion report. The well water quality

report will be reviewed and approved by DEQ before the well is connected to the distribution system.

F. Final disinfection and flushing to remove all chlorine residual will be performed after well construction. Water quality sample results for chlorine residual will be submitted to DEQ for review before the well is connected to distribution.

Sincerely,
HOLLADAY ENGINEERING COMPANY

By: _____
Chris Duncan, P.G.
Project Geologist

cc: Rob Whitney, IDWR

Attachment

I:\ENGR\EG\061204\Well Specs Test Well No 1\DEQ Well Site Eval Letter Test well no 1.doc

TABLE OF CONTENTS

1410 North Hilton • Boise, ID 83706-1255• (208) 373-0502

GENERAL PLAN AND SPECIFICATION REVIEW CHECKLIST

Revision: January 2005

A. ADMINISTRATIVE COMMENTS

All applicable checklists shall be completed and submitted with the application unless a particular Regional Office follows a different routine for particular types of projects. Contact the Engineering Manager for the DEQ Regional Office in your area for direction on this issue of required use.

Particular Regional Offices may also have additional information available for use by developers and consultants. Some of this information is in the form of "Design File Notes" (DFN's) or other guidance, which include explanations for filling out some of the checklists, guidance on particular issues, etc. These Design File Notes can be obtained from your local Regional Office Engineering Manager if they are applicable to your Region.

B. GENERAL PROJECT INFORMATION

1. Project Name: City of Eagle Test Well No. 1 – Eagle Sports Development, LLC
2. Location: Located on Quarter Circle D. J. Ranch, approximately 0.7 miles northwest of the intersection of Hwy 44 and Linder Road in NW ¼ of the SE ¼ of Section 11, T. 4N, R.1E. Well location is staked in agricultural field.

   City: Eagle County: Ada
3. Project Description: City of Eagle Test Well No. 1, City of Eagle PWS No. 4010201
4. Project includes modifications to, or plans for a new:

   Public drinking water system ☒

   Public sewer system ☐

   Storm water disposal system ☐

   Pressure Irrigation system ☐
5. Design Engineer: Ken Rice, PE and Chris Duncan PG ☒ - PE

   Firm: Holladay Engineering Co.

Address: PO Box 235 City: Payette State: ID ZIP: 83661

E-mail Address: ken@holladayengineering.com

Phone: 642-3304

FAX: 642-2159

6. Project Owner or Developer: (Please provide exact name of owner or authorized representative)

Name: Todd Santiago

Firm: Eagle Sports Development LLC.

Address: 533 E. Riverside Drive, Suite 200 City: Eagle State: ID ZIP: 83616

E-mail Address: todd.santiago@legacyid aho.com Phone: (208) 385-0558

7. Name of entity that will operate and maintain completed systems (Please provide exact name of owner or authorized representative)

Name: Vern Brewer

Firm: Holladay Engineering Co.

Address: PO Box 235 City: Payette State: ID ZIP: 83661

E-mail Address: Vern @holladayengineering.com

8. Drinking water system is "Investor Owned" (Investor owned includes "C" or "S" Corporations, sole proprietorships, partnerships, LLC's, etc.) ☐ Yes ☒ No

(If yes, your system may also be regulated by the Idaho Public Utility Commission. Please contact the Idaho Public Utility Commission about your regulatory status.)

C. ***REQUIRED SUBMITTALS AND CERTIFICATIONS***

Projects will not be accepted unless all necessary submittals have been attached, or an explanation for their omission has been provided.

1. Submittals:

a. All pertinent DEQ checklists included? ---------- ☒

b. City Council or County approval attached?---------- ☐

c. If a project will be platted, the submittal must include either the preliminary plat or, if available, the preliminary version of the final plat. ☐

d. If the project will be part of an existing water or sewer system, certifications that the existing systems will not be overloaded are provided: (check all that apply)

☐ - Calculations from a registered professional engineer

☐ - A letter(s) of certification from the owner(s)

e. Engineering inspection and as-built certification contract is attached. (This contract must cover pressurized irrigation systems, if part of the project.) ---------- ☒

Inspector's name and firm if different from design engineering firm: _____

2. Certifications:

a. The attached plans represent the final, approved set from the utility: ---------- ☐

b. The Dig-line number has been provided to owners and contractors: ---------- ☒

c. If the project will generate dewatering or other construction wastewater that discharges to State waters, then a Short Term Activity Exemption, or equivalent, has been obtained: ---------- ☒

IDEQ representative issuing exemption: _____

d. If the project contains both water and sewer mains, but those services are provided by different utilities, contact DEQ: ---------- ☐

☐ - Show the water and sewer on the same plans

☐ - If not, prior approval must be received from DEQ

e. Construction without approval from DEQ, or without engineering supervision, is a violation of Idaho Code 39-118 (and/or associated state rules). We can assist you as needed to resolve these situations and request that you contact DEQ immediately if you learn of these violations: ---------- ☐

f. All other easements, permits, and rights-of-way have been obtained: ---------- ☒

D. PLANS & SPECIFICATIONS

1. Plans must have:

a. Cover sheet with Table of Contents for plan set: ---------- ☒

b. Clear vicinity map or written directions to location of project: ---------- ☒

c. North arrows: ---------- ☒

d. Bound and numbered pages: ---------- ☒

e. Index sheet showing overall layout of plan and profile sheets: ---------- ☒

f. Plans (all sheets) and first page of specifications must be:

Signed - ☒ Dated - ☒ Stamped - ☒

2. A table of contents is included for engineering reports and bound specifications: ---------- ☒

3. Identify the standard specifications used for this project (may be more than one):

☒ - *Idaho Standards for Public Works Construction (2003)*: Current date: _____

☐ - Municipality: _____ Current date: _____

☐ - Utility: _____ Current date: _____

☒ - Other: _____ Current date: _____

4. Non-potable mains are:

a. 10' from water lines: ---------- ☐

b. 50' from public or private wells: ---------- ☒

E. STORMWATER DISPOSAL

1. Storm water removal and treatment description:

_____

_____

2. Storm water ponds, basins, seepage beds, and appurtenant structures are in conformance with the current *Catalog of Storm Water Best Management Practices for Idaho Cities and Counties:* ------ ☐

a. BMP #s used: _____

b. Depth to seasonal high groundwater (SHGW): _____ ft

How determined? _____

c. Separation between SHGW and disposal system:

☐ - Greater than 5' where level can't be determined accurately

☐ - Greater than 3' where level is predictable

3. Storm water ponds, basins, infiltration systems, and appurtenant structures are on the plans: --------- ☐

4. Subsurface disposal or permanent unlined ponds must be at least 100' from any well: --------- ☐

5. Subsurface disposal or permanent unlined ponds must be at least 25' from any water line: -------- ☐

6. Geotechnical Report attached---------- ☐

7. Drainage Report attached---------- ☐

8. Other potable wells within 500': _____

F. PRESSURIZED IRRIGATION

This section is required for projects that include pressurized irrigation.

1. Plans and specifications for pressurized irrigation systems are provided:---------- ☐

2. Additional information is included showing the design and management system:---------- ☐

3. Who will supply irrigation water for the system? _____

4. If the potable water system supplies a pressure irrigation system, specify a reduced pressure back-flow prevention device that is on the *Drinking Water List of Approved Back-flow Prevention Devices:* ☐

5. We understand that the record drawings or as-built certification must cover the pressurized irrigation system. ☐

Note: **This checklist addresses the majority of common items from the Idaho Rules for Public Drinking Water Systems (IRPDWS), the Recommended Standards for Water Works (RSWW), and common engineering practices. However, this checklist is not all-inclusive and users are expected to fully understand the rules and standards, apply them where necessary, and request interpretations from DEQ if there are any questions. DEQ regional offices may have additional written information that will assist in the design/approval process.**

All of the items indicated on the above checklist are accurately reflected in the attached Plans and Specifications.

Design Engineer's Signature: Michael E Holladay Date: 11/30/05

P.E. Stamp:

PUBLIC DRINKING WATER WELL SITE EVALUATION

DEPARTMENT OF ENVIRONMENTAL QUALITY

All public water well sites must be approved in writing by DEQ prior to drilling (*Idaho Rules for Public Drinking Water Systems [IRPDWS], Section 550.03.a).*

PROCEDURE

1. Call DEQ to determine if there is known groundwater contamination in the general area.
2. A registered professional engineer, geologist, or other consultant qualified in the field of hydrogeology must prepare a thorough site evaluation, including items listed below.
3. Submit evaluation to DEQ, and schedule a field inspection. The exact location of the well must be staked by the engineer prior to DEQ inspection.
4. If the well is acceptable, DEQ will issue written approval.
5. Plans and specifications for the well and pump house must be approved by DEQ prior to construction.

CHECKLIST FOR CONSULTANT

1. ☒ Name of project or water system. City of Eagle Test Well No. 1 - Eagle Sports Development, LLC
2. ☒ Date DEQ contacted to discuss potential groundwater problems. 11/16/05
3. ☒ Name of person contacted. Ken Rice, P.E. and Chris Duncan, P.G.
4. ☒ Provide a narrative discussion explaining why the site was chosen and why it is suitable for a public water system well. Discussion must include the following:
   - a. ☒ Location (include separate vicinity map with directions to the site) (IRPDWS 550.03.a)
   - b. ☒ Well lot must be dedicated to the water system only, and on property owned or leased by the water system. Contact DEQ if the well lot is part of a larger commonly owned property. (IRPDWS 550.03.o)
   - c. ☒ Terrain and access for drilling rig and equipment (CEP)
   - d. ☒ Floodways and floodplains (IRPDWS 551.01.n)
   - e. ☒ Surrounding land use (residential, commercial, industrial, open space, etc.) (IRPDWS 550.03.a.vi)
   - f. ☒ Anticipated production rate of well (IRPDWS 550.03.a.iv)
   - g. ☒ Description of soils and lithology (provide well log from nearby wells) (IRPDWS 550.03.a.ii,iii)
   - h. ☒ Anticipated depth to well screen; type and depth of annular seal (IRPDWS 550.03.c)
   - i. ☒ Discussion of groundwater quality, and any known contamination within 1 mile (IRPDWS 550.03.a.i)

j. ☒ Underground geological data and well logs of existing nearby wells (IRPDWS 551.01.p.iii)

k. ☒ Aquifer recharge projects or injection wells within 1 mile, and how they influence the proposed well. (IRPDWS 550.03.a.iv)

l. ☒ How the well will be protected against sources of pollution, or the how site conforms to the local well head protection plan (contact the city or county to determine implemented plans). (RSWW 3.2.3.3)

m. ☒ Potential for the well to be "Groundwater Under the Direct Influence of Surface Water (GWUDI; see *GWUDI Evaluation Procedure on page 3*). (IRPDWS 551.01.l)

n. ☒ Other evaluated well sites (RSWW 1.1.7.2.a)

o. ☒ Professional opinion that the site is suitable for a public water supply well (RSWW 1.1.7)

p. ☒ Sign and date the evaluation (IRPDWS 551.04.a.i)

5. ☒ Provide a site map covering at a 50 ft. radius showing the following:

a. ☒ Well location (include vicinity map with directions to the well site) (RSWW 551.01.a)

b. ☒ Direction of ground water flow (IRPDWS 550.03.a.iii)

c. ☒ Potential sources of contamination within 500 feet of the well (IRPDWS 550.03.a.vi)

d. ☒ Distance from well to lot boundaries (50 feet minimum) (IRPDWS 550.03.o, 551.01.p.ii)

e. ☒ Surface water sources, including lakes, rivers, canals, ditches, etc. (50 feet minimum separation) (IRPDWS 550.03.b)

f. ☒ Slope of the land (IRPDWS 551.01.n)

g. ☒ Septic tanks and drain fields (100 feet minimum separation for small systems; contact DEQ regarding separation and hydrologic analysis requirements for large disposal systems). (IRPDWS 550.03.b)

h. ☒ Sewer, storms drains, irrigation, and other non-potable mains or service lines (50 feet minimum) (IRPDWS 550.03.b)

i. ☒ Other buried utilities (IRPDWS 550.03.b)

j. ☒ Subsurface storm water disposal facilities or storm water ponds (100 feet minimum) (IRPDWS 550.03.b)

k. ☒ Injection wells IRPDWS 550.03.b)

l. ☒ Fuel tanks (50 feet minimum unless containment is provided). (IRPDWS 550.03.b)

m. ☒ Roads and parking areas (50 feet minimum). (IRPDWS 550.03.b)

n. ☒ Buildings (50 feet minimum) (IRPDWS 550.03.b)

o. ☒ Livestock (50 feet minimum) (IRPDWS 550.03.b)

p. ☒ Other potential sources of contamination (50 feet minimum) (IRPDWS 550.03.b)

NOTE: DEQ recommends (and may require) distances greater than the minimums previously listed, if appropriate to protect public health

REFERENCES

Idaho Rules for Public Drinking Water Systems

Recommended Standards for Water Works (also known as "Ten States Standards") 2003

Administrative Rules of the Idaho Water Resource Board: Well Construction Standards, Rules

Idaho Wellhead Protection Plan

Cities and water purveyors are encouraged to develop wellhead protection plans to prevent contamination of groundwater used for drinking water. DEQ has developed a guidance manual to help communities prepare their plans. The *Idaho Wellhead Protection Plan* is available at the regional DEQ office.

GWUDI Evaluation Procedure (Contact DEQ)

The system owner must demonstrate, prior to serving the public, that the proposed source of water is unlikely to be considered as Groundwater Under the Direct Influence of Surface Water (GWUDI). DEQ will issue a determination with final written approval of the site in accordance with the following guidelines:

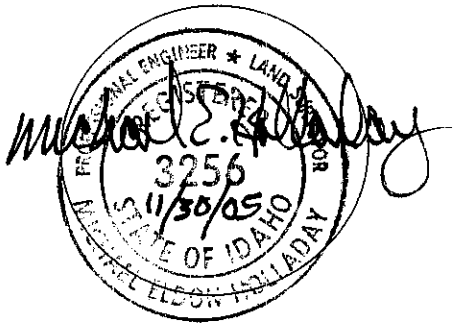
1. Sources within 200 feet of surface water must be evaluated for a six month period, per Procedure II in the protocol, unless hydrogeologic information is provided to show that testing is not required. (Surface *water is defined as water that flows or is ponded for more that 60 days per year: the days do not have to be continuous*)
2. Well located between 200 and 500 feet from surface water are usually allowed less rigorous monitoring, and are allowed to serve customers, under Procedure II in the protocol.
3. Well located more than 500 feet from surface water are generally deemed "groundwater" unless the aquifer is very shallow (e.g., springs or shallow well fields) or vulnerable to surface water (e.g., not protected by adequate confining layers).

Note: **This checklist addresses the majority of common items from the Idaho Rules for Public Drinking Water Systems (IRPDWS), the Recommended Standards for Water Works (RSWW), and common engineering practices. However, this checklist is not all-inclusive and users are expected to fully understand the rules and standards, apply them where necessary, and request interpretations from DEQ if there are any questions. DEQ regional offices may have additional written information that will assist in the design/approval process.**

All of the items indicated on the above checklist are accurately reflected in the attached Plans and Specifications.

Design Engineer's Signature: Michael S. Holladay Date: 11/30/05

P.E. Stamp:



DRINKING WATER WELL CONSTRUCTION DESIGN CHECKLIST

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

Project Name: City of Eagle Test Well No. 1 – Eagle Sports Development, LLC

Water System Name: City of Eagle, PWS No. 4010201

I. ADMINISTRATIVE COMMENTS

	Yes	No	NA
A. All applicable checklist items must be **specifically addressed in the plans and specifications**, in a manner that clearly shows how each item will be satisfied. Numbers in parentheses refer to applicable sections of either the *Recommended Standards for Water Works,* 2003 Edition (RSWW) or the *Idaho Rules for Public Drinking Water Systems* (IRPDWS). The acronym (CEP) after some of the items stands for Common Engineering Practice. If rules or standards are to be used for construction, they must be written on the plans or included in the specifications, not merely referenced.	☒		
B. Written justification must be provided for any crosshatched areas that are checked.	☒		

II. DOCUMENTS REQUIRED FOR A COMPLETE SUBMITTAL

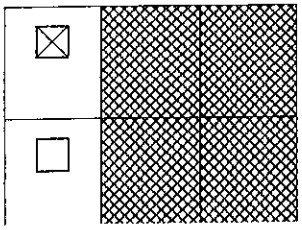
A. Well Construction Checklist (this checklist).	☒		
B. General Plan and Specification Review Checklist.	☒		
C. Three complete sets of stamped plans and specifications. (One set will be kept for DEQ files). (CEP)	☒		
D. Well Design Engineering Report. (IRPDWS 551.01)	☐	☒	☐
E. A signed inspection contract. (RSWW 1.6)	☒		

III. ADMINISTRATIVE REQUIREMENTS

A. Was IDWR consulted prior to well design?	☒		
B. Application to Appropriate Water filed with IDWR (IDAPA 37.03.08.035.01.a) and an approved Permit to Appropriate Water included with submittal. (CEP)	☐		

C. Application for Drilling Permit filed with IDWR. (IDAPA 37.03.09.045.01.a) Note: Water Rights and Drilling Permit must be approved by IDWR prior to construction.

D. Written approval of the well site received from DEQ. (IRPDWS 550.03.a)

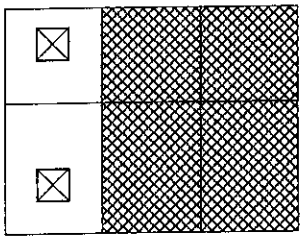


	Yes	No	NA
E. Professional engineering & inspection services available during well construction? (IRPDWS 551.04.c)	☒		
F. Are minimum separation distances from non-potable water systems, property lines, surface waters, and other sources of contamination provided? (IRPDWS 550.03.b)	☒		

IV. MATERIAL AND EQUIPMENT

A. Specifications for material transportation, handling, storage, and protection. (CEP)

B. Equipment and/or materials, including drilling fluids, used in well construction NSF Standard 61 approved or equivalent. (IRPDWS 550.02)

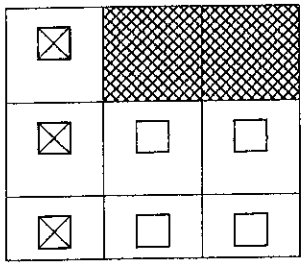


V. GEOLOGIC SAMPLING

A. Sampling interval (e.g. every 5 feet or change in lithology), and methods identified. (RSWW 3.2.4.3.a)

B. Need for geophysical logs (i.e., resistivity, gamma, sonic, etc.)? (CEP)

C. Collect and save samples? (CEP)



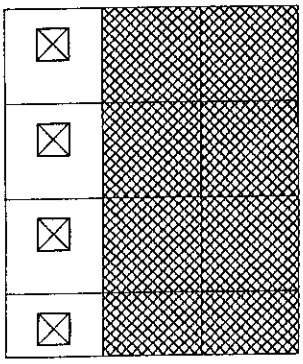
VI. DRILLING

A. Separate specification sections for each type of acceptable drilling method. (CEP)

B. All "downhole" materials cleaned and disinfected with 500 ppm chlorine solution. (IDAPA 37.03.09.025.19)

C. ANSI/NSF 61 certified drilling mud product name(s) or specification. (IDAPA 37.03.09.025.18) (IRPDWS 550.02)

D. Record location and approximate volume of drilling mud losses. (CEP)



VII. CASING

A.	Thickness and weight for steel pipe must meet Recommended Standards for Water Works requirements (i.e., 8-inch casing must be at least 0.322 inches thick). (RSWW Table 1)	☒		
B.	For steel casing, welding procedures and specifications. (CEP)	☒		☐
C.	For steel casing, welds penetrate full thickness of the casing wall. (IDAPA 37.03.09.025.02.a)	☒		☐
D.	Plastic well casing must be certified per ANSI/NSF Standards 14 and 61 and ASTM F480, and be approved for site specific use by DEQ and IDWR. The engineer must be present during placement of the casing and any packing material that is required to ensure structural stability. (RSWW 3.2.5.5)	☐		☐

		Yes	No	NA
E.	Instructions for removal of temporary casing (i.e., to prevent separation during extraction). (CEP)	☐		☒
F.	Depth of penetration of well casing into identified confining layer is clearly shown in the plans and specifications (CEP)	☐		☒
G.	If drive shoes are used to seal casing, describe method for testing shoe seal. (CEP)	☐		☒
H.	Plumbness and alignment test methods and allowable tolerance clearly stated in the specifications? (RSWW 3.2.4.2.b)	☒		
I.	Top of casing at least 18 inches above finished grade and/or 12 inches above well house floor, preferably higher. (IRPDWS 550.03.1.i)	☒		
J.	Finished grade at least 12 inches above natural ground level to provide slope away from well in all directions. (CEP)	☒		
K.	Permanent 1½ inch diameter casing vent (downturned, screened with #24 mesh, and terminating at least 18 inches above floor or ground) or equivalent vented well cap. (RSWW 3.2.7.6)	☐		

VIII. SEALS

A.	Depth, method of placement, and type of seal.			
1.	(Poured) or pumped. (circle one that applies)			
2.	Placement of seal will be slow and continuous. (CEP)	☒		
3.	Volume and type of material will be recorded and checked against engineering specifications every 5 to 10 feet. (CEP)	☒		
4.	Minimum 50% excess seal material will be on site. (CEP)	☒		

5. Temporary casing and/or tremie will be withdrawn as the seal is placed. (CEP)

B. Minimum requirements for annular seal thickness are specified in accordance with RSWW 3.2.5.9.

C. Testing method for well seal is specified (regular tagging of top seal, volume calculations, bail down/fill up, other). (CEP)

D. Consultant present and IDWR contacted prior to seal placement. (contact IDWR)

E. Intermediate seals to separate aquifers that are, or may be, contaminated or yield undesirable water. (RSWW 3.2.5.2.b)

F. Casing will be provided with sufficient guides welded to the casing to permit unobstructed flow and uniform thickness of grout. (RSWW 3.2.5.9.e) Placing guides at least every 60 feet is recommended. (CEP)

G. After cement grouting is applied, work on the well shall be discontinued until the cement or concrete grout has properly set. (RSWW 3.2.5.9.d.6)

☐	☒	
☒		
☒		
☒		
☐		☒
☒		
☐		☒

IX. SCREENS AND PERFORATED CASINGS

A. 304, 304L, 306, or 306L (ANSI/NSF Standard 61 certified stainless steel, or other material resistant to damage by chemical action of groundwater or cleaning operations as approved by the Department. (RSWW 3.2.5.8.a)

B. The specifications describe minimum construction requirements and/or acceptable brands. (CEP)

C. Screen will be designed based on the results of sieve analyses. (IRPDWS 550.03.e.iii.(3))

D. Screen diameter and placement detail is included, including blank casing and bottom plate or wash down bottom fitting of the same material as the screen. and minimum use of drilling muds). (RSWW 3.2.5.8.f)

E. The screen will be centered in the annular space. (CEP)

Yes	No	NA
☒		☐
☒		☐
☒		☐
☒		☐
☒		☐

X. FILTER PACK (Note: All screens and perforated sections shall be filter packed unless otherwise authorized by DEQ/IDWR)

A. Material description and physical properties and disinfection requirements are specified in accordance with RSWW 3.2.6.2.a.

B. Make & model of screen seal or packer (to protect against leakage of grout into the gravel pack or screen) is shown on the plans and described in the specifications. (RSWW 3.2.6.2.e)

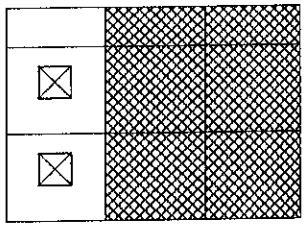
C. Filter pack designed from aquifer formation sieve analysis evaluated by engineer or geologist (and screen manufacturer if requested). (IRPDWS

☒			
☒			
☒			

550.03.e.iii.(3))

D. Details of filter pack placement requirements are specified in accordance with RSWW 3.2.6.2.

E. Details of filter pack including tagging, volume checks, and extension above and below screen (typically 3 feet) are specified. (CEP)



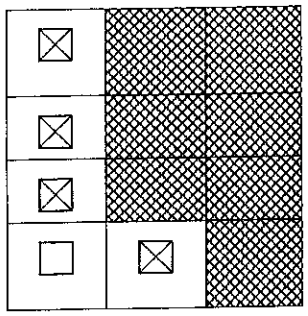
XI. WELL DEVELOPMENT

A. Development method, equipment, and duration are specified in accordance with RSWW 3.2.5.11.

B. Passing criteria is specified in accordance with RSWW 3.2.5.11.

C. The specifications require final cleaning of sump. (CEP)

D. A preliminary production test is recommended, especially for air-rotary rigs. (CEP)



XII. FINAL PRODUCTION TESTS

A. Engineer or geologist (or a representative of the engineer or geologist) present during testing. (CEP)

B. The pump rate and duration are specified as:

☒. The well will be test pumped at the design capacity for at least 24 consecutive hours after drawdown has stabilized.

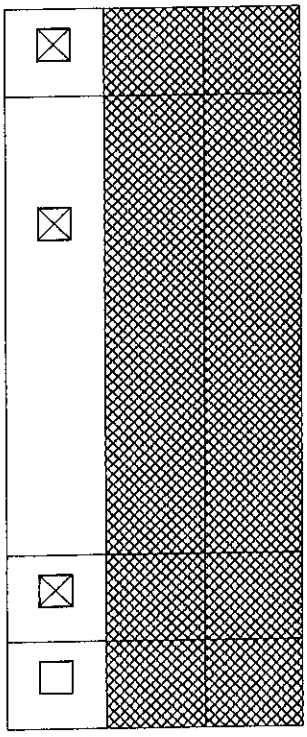
Or

☐ The well will be test pumped at 150% of the design capacity for at least 6 consecutive hours after drawdown has stabilized.

In either case, if the drawdown does not stabilize, the pumping will continue for at least 72 consecutive hours. (IRPDWS 550.03.f.i)

C. The specifications call for the data listed in IRPDWS 550.03.f.iii to be recorded and provided to DEQ.

D. If the well is located in a low yield aquifer, an additional 3-day test at average ultimate use may be required - contact DEQ.



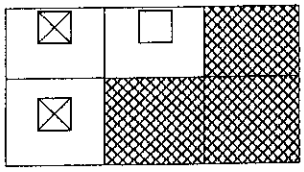
Yes	No	NA
☒		
☒		

E. Bacterial and chemical water quality testing as required for new sources. Contact DEQ for the specific monitoring requirements for different types of public water systems.

F. Final disinfection and flushing to remove all chlorine are specified in accordance with RSWW 3.2.5.12. (Also see Item XIV.A)

G. TV inspection is specified. (Recommended for all wells, particularly with large wells or where problems are anticipated). (CEP)

H. Measurement for sand content (must be < 5 ppm) either by laboratory or as specified in IRPDWS 550.03.f.ii.

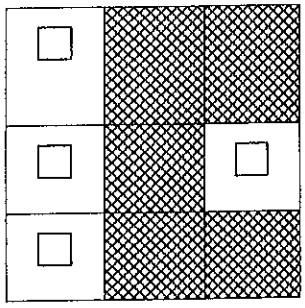


XIII. PITLESS ADAPTERS

A. Pitless adapter approved by NSF, Water Systems Council, or equivalent. Make and model are shown in the plans and specifications. (IRPDWS 550.03.m.vi.(1))

B. Field tested per Manual of Individual Water Supply Systems, except for welded on units. (IRPDWS 550.03.m.vi.(3))

C. Replacement of upper casing annular seal to the original specifications. (CEP)



XIV. SITE CONTROL

A. Construction wastewater and storm water disposal methods are specified. (If discharged to surface water or canals, proper authorizations obtained) (CEP)

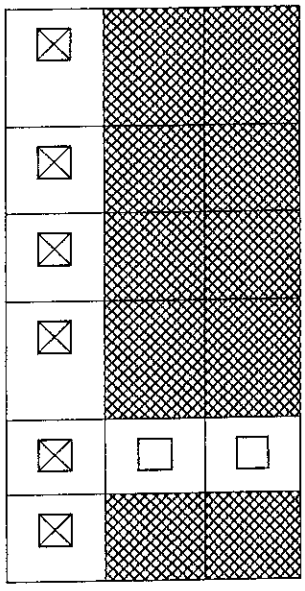
B. Runoff shall not contain sediment unless erosion control measures, approved by DEQ, are in place. (CEP)

C. Water leaving the site does not contain drilling fluid additives, drill foam or sealant material. (CEP)

D. Well construction waste and/or debris, including drilling fluid waste, disposed of at a sanitary landfill or other site approved by the engineer. (CEP)

E. Dust and noise control recommended. (CEP)

F. Holes, pits, equipment, and chemicals safety stored and fenced per OSHA standards. (CEP)



XV. PROJECT COMPLETION

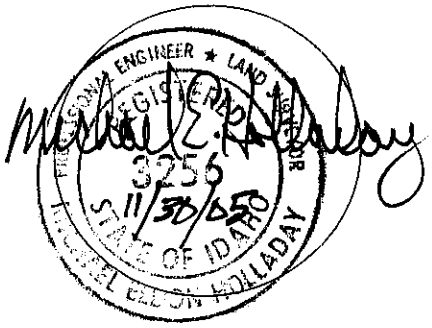
	Yes	No	NA
A. Site cleanup requirements are specified. (CEP)	☒		
B. Adequate temporary cover or cap per IDWR requirements. (IDAPA 37.03.09.025.02.a)	☒		
C. Submit data and reports to engineer, DEQ, and IDWR. This shall include the well log, production pump specifications and pumping curves, pumping test results, and results of new source monitoring tests. (IRPDWS 550.03.e)	☒		

Note: **This checklist addresses the majority of common items from the Idaho Rules for Public Drinking Water Systems (IRPDWS), the Recommended Standards for Water Works (RSWW), and common engineering practices. However, this checklist is not all-inclusive and users are expected to fully understand the rules and standards, apply them where necessary, and request interpretations from DEQ if there are any questions. DEQ regional offices may have additional written information that will assist in the design/approval process.**

All of the items indicated on the above checklist are accurately reflected in the attached Plans and Specifications.

Design Engineer's Signature: Michael E. Holladay Date: 11/30/05

P.E. Stamp:



Checklist References:

1. *Idaho Rules for Public Drinking Water Systems (IRPDWS)*
2. *Well Construction Standards Rules (IDAPA 37.03.09)*
3. *Recommended Standards for Water Works (RSWW) dated 2003.*
4. *Johnson, Groundwater and Wells*
5. *AWWA Standards*
6. *Manual of Individual Water Supply Systems*

NOTE TO BIDDER: Use typewriter or BLACK ink for completing this Bid Form.

BID FORM

PROJECT IDENTIFICATION: City of Eagle Test Well No. 1 (Eagle Sports Development, LLC)

The well site is currently located in an agricultural field in the NE ¼, of the NW ¼, of Section 11, T4N, R1W on the Quarter Circle DJ Ranch between Highway 16 and Linder Road, and north of Highway 44, in the City of Eagle (a site location map is found in the Appendix). The well site is accessed from the Quarter Circle DJ Ranch office located on Floating Feather Road. The well will be built to IDEQ and IDWR standards for a municipal water supply well as part of the City of Eagle western water system expansion and will supply a subdivision proposed by Eagle Sports Development, LLC. All work will be at the discretion and direction of Holladay Engineering Company as an authorized representative of the owner(s) listed above for the purpose of securing conditions most favorable toward successfully completing a public water supply well as per design and performance specified in this document. Contractor agrees to perform all work described in the Item Descriptions and Special Conditions for the unit prices provided below:

1. BASE BID

1.1. Unit Price Work:

Bidder further proposes to accept as full payment for the Unit Price Work proposed herein the amounts computed under the provisions of the Bidding Documents and based on the following unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved. Bidder agrees that the unit prices represent a true measure of the labor, materials, and services required to furnish and install the item, including all allowances for overhead and profit for each type and unit of Work called for in these Bidding Documents.

1.2. Proposal Bid

Bid Item	Description	Unit	Amount	Unit Price	Extended Total Amount
1	Mobilization / Demobilization	L.S.	1		
2	12" Drilling	L.F.	500		
3	24" Drilling	L.F.	500		
4	28" Drilling	L.F.	190		
5	16" Steel Casing	L.F.	182		
6	12" Steel Casing	L.F.	240		
7	12" to 16" Steel Casing Reduction Flange	L.S.	1		
8	12" S.S. Screens	L.F.	80		
9	Drilling Mud (50# Bags)	EA.	50		
10	Filter Media	C.Y.	12.5		
11	Bentonite Seal	C.Y.	49.4		
12	16" Flanged Tee and Gate Valve Wellhead Assembly	L.S.	1		
13	Steel I-Beam Well Supports and Concrete Slab	L.S.	1		
14	Well Completion	L.F.	500		
15	Geophysical Logging	L.S.	1		
16	Well Development	HR.	24		
17	Install and Remove Test Pump	L.S.	1		
18	Conduct Test Pump	HR.	24		
19	Video Well Inspection	L.S.	1		
20	Standby at Well Site	HR.	4		
	TOTAL BID				

1.3 BID ITEM DESCRIPTIONS

All pay unit items shall be supplied and constructed in accordance with the plans and specifications and are not intended to modify the work. **ALL CONSTRUCTION AND MATERIALS SHALL BE IN CONFORMANCE WITH *1990 IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPWC), IDAHO DIVISION OF ENVIRONMENTAL QUALITY WELL CONSTRUCTION DESIGN CHECKLIST (IDEQWCDC), REGULATIONS FOR PUBLIC DRINKING WATER SYSTEMS (IDAHO DEPARTMENT OF HEALTH AND WELFARE)* and *IDAHO DEPARTMENT WATER RESOURCES WELL CONSTRUCTION STANDARDS (IDWRWCS)* (IDAPA 37, TITLE 03, CHAPTER 09). Any conflicts with ISPWC, IDEQWCDC, or IDWRWCS and these documents, the referenced regulatory documents take precedence.**

Item	Description	Item Description/Method of Payment
1	**MOBILIZATION / DEMOBILIZATION**	Item 1 is mobilization and demobilization of materials, equipment, personnel, and related operations necessary to successfully complete the project. This item includes decontamination of materials and equipment placed down-hole and in contact with drilling fluids (see *Special Conditions*). Pay unit for Item 1 is LUMP SUM.
2	**12" Drilling**	Item 2 is the total time and item costs necessary to drill a nominal five hundred foot (500') borehole with a minimum diameter of twelve inches (12") as a pilot boring to provide subsurface hydrogeologic exploration. Anticipated downhole formation conditions are described in the *Special Conditions*, however the actual total drill footage required may vary depending on subsurface conditions encountered. Total depth in excess of 500 feet must be approved by Engineer prior to additional drilling. Cost per lineal foot in Item 2 must reflect the contract rate of accomplishing the specified depth and task, according to the selected drill method and as described in *Special Conditions*. Item 2 includes, but not necessarily limited to, all of the following applicable time and item costs: drill permit, equipment, material and personnel to and from the site, borehole drilling, borehole conditioning, tripping of rods and tool extraction, drilling mud(s) and construction of mud pit(s), collection of formation samples at every five-foot depth interval into ½ gallon-size water-tight plastic bags, support vehicles and equipment operation, bit costs, fuel and drill fluids and other equipment consumables, daily travel to and from site, and manpower costs required to complete the task. Contractor shall bear the time and cost of any incurred equipment repair and maintenance. Pay unit is per LINEAL FOOT, not to exceed 500 feet without approval of Engineer.

3	**24" DRILLING**	Item 3 is the total time and item costs necessary to drill a nominal five hundred foot (500') borehole with a minimum diameter of twenty four inches (24") to provide for a minimum six inch (6) annulus for a twelve inch (12") diameter well casing and screen. Anticipated downhole formation conditions are described in the *Special Conditions*, however the actual total drill footage required may vary depending on subsurface conditions encountered. Total depth in excess of 500 feet must be approved by Engineer prior to additional drilling. Cost per lineal foot in Item 3 must reflect the contract rate of accomplishing the specified depth and task, according to the selected drill method and as described in *Special Conditions*. Item 3 includes, but not necessarily limited to, all of the following applicable time and item costs: drill permit, equipment, material and personnel to and from the site, borehole drilling, borehole conditioning, tripping of rods and tool extraction, drilling mud(s) and construction of mud pit(s), collection of formation samples at every five-foot depth interval into ½ gallon-size water-tight plastic bags, support vehicles and equipment operation, bit costs, fuel and drill fluids and other equipment consumables, daily travel to and from site, and manpower costs required to complete the task. Contractor shall bear the time and cost of any incurred equipment repair and maintenance. Pay unit is per LINEAL FOOT, not to exceed 500 feet without approval of Engineer.
4	**28" DRILLING**	Item 4 is the total time and item costs necessary to drill a nominal one hundred and ninety foot (190') borehole with a minimum diameter of twenty eight inches (28") to provide for a minimum six inch (6) annulus for a sixteen inch (16") diameter casing well. Anticipated downhole formation conditions are described in the *Special Conditions*, however the actual total drill footage required may vary depending on subsurface conditions encountered. Total depth in excess of 190 feet must be approved by Engineer prior to additional drilling. Cost per lineal foot in Item 4 must reflect the contract rate of accomplishing the specified depth and task, according to the selected drill method and as described in *Special Conditions*. Item 4 includes, but not necessarily limited to, all of the following applicable time and item costs: drill permit, equipment, material and personnel to and from the site, borehole drilling, borehole conditioning, tripping of rods and tool extraction, drilling mud(s) and construction of mud pit(s), collection of formation samples at every five-foot depth interval into ½ gallon-size water-tight plastic bags, support vehicles and equipment operation, bit costs, fuel and drill fluids and other equipment consumables, daily travel to and from site, and manpower costs required to complete the task. Contractor shall bear the time and cost of any incurred equipment repair and maintenance. Pay unit is per LINEAL FOOT, not to exceed 190 feet without approval of Engineer.
5	**16" STEEL CASING**	Item 5 is the material cost and delivery to the project site for one hundred and eighty two (182) lineal feet of sixteen inch (16") diameter, heavy wall (0.375 inch), API Standard 5L Grade B steel casing. Pay unit is per LINEAL FOOT.

6	**12" STEEL CASING**	Item 6 is the material cost and delivery to the project site for two hundred forty (240) lineal feet of twelve inch (12") diameter, heavy wall (0.375 inch), API Standard 5L Grade B steel casing with equivalent bottom plate. Pay unit is per LINEAL FOOT.
7	**12" TO 16" STEEL CASING REDUCTION FLANGE**	Item 7 is the material cost and delivery to the project site of a 12" to 16" welded steel casing reduction flange constructed of equivalent steel casing material, heavy wall (0.375 inch), API Standard 5L Grade B steel. Pay unit is per LUMP SUM.
8	**12" STAINLESS STEEL SCREEN(S)**	Item 8 is the material cost and delivery to the project site for eighty (80) lineal feet (nominal) of twelve (12) inch diameter pipe size, wound triangular-shaped wire, continuous slot screen of type 304 or better grade stainless steel (see *Special Conditions*). The proposed screen size is 30 slot. The slot size shall be evaluated by Contractor and Engineer based on mechanical sieve analysis of the water-bearing sediments, sample inspection of water bearing material and artificially filter pack to provide for sand free water production as required in *Special Conditions*. The final screen length will be based on drilling and geophysical results. Final screen configuration shall not exceed an average water entrance velocity of 0.1 feet per second through screen slot. Screen shall be approved by Engineer prior to installation. Pay unit is per LINEAL FOOT.
9	**DRILLING MUD**	Item 9 is the material cost and delivery to the project site drilling mud(s). Drilling mud and/or other drilling additives may be used for stabilization and to restrict overflow production of reject drilling fluids with approval of the Engineer (see *Special Conditions*). All materials must be NSF 61 approved. Pay unit is per EACH 50 POUND BAG used in drilling.
10	**FILTER MEDIA**	Item 10 is the material cost and delivery to the project site of Colorado Silica® sand artificial filter media. Proposed gradation is #8-12. Final gradation selection will be based on an evaluation by Contractor and Engineer of screen final selection, subsurface conditions, sieve analysis and sample inspection of water bearing formations selected for screening and performance requirements of well (see *Special Conditions*). Drill method chosen by Contractor must allow for installation of a minimum six (6) inch thick sand pack adjacent to the screen section. Sufficient artificial filter pack material will be provided on-site to construct a filter pack from the bottom of the boring to 350 feet below ground surface and 60 feet above the top of screen. The calculated annular artificial filter pack volume is 12.5 C.Y. Placement of filter media will be dispensed slowly and continuously down well annular, while the level and volume are monitored. A poured tremie method may be required by Engineer based on subsurface conditions encountered. Artificial filter media shall be approved by Engineer prior to installation and NSF 61 approved. Material volume of artificial filter pack may vary depending on final well configuration and subsurface conditions. Pay unit is per CUBIC YARD of material installed.

11	**BENTONITE SEAL**	Item 11 is the material cost and delivery to the project site of ¾-inch solid bentonite, Course EnviroPlug® manufactured by WyoBen, or equivalent as approved by Engineer (see *Special Conditions*). Material must be NSF approved. Sufficient material will be provided on-site (plus 50 percent) to construct a seal from the top of artificial filter pack at 350 feet to ground surface. The calculated annular seal volume is 32.9 C.Y. The calculated material volume required onsite is 49.4 C.Y. (calculated annular volume plus 50 percent). Bentonite seal will be installed by slowly and continuously pouring material into well annular, while the level is tag line measured and volume is calculated to detect material bridging. If material bridging occurs, a bentonite grout seal will be installed using a pumped positive pressure displacement method and/or other methods will be employed (including re-drilling and reconstruction) in order to provide a continuous seal as specified, as approved by Engineer. Bentonite grout material will consist of a minimum of 30% solids by weight. Material volume of the final seal may vary depending on final well configuration and subsurface conditions. Pay unit is per CUBIC YARD of material installed If material bridging occurs, a bentonite grout seal will be installed using a pumped positive pressure displacement method. Bentonite grout material will consist of a minimum of 30% solids by weight. Material volume of the final seal may vary depending on final well configuration and subsurface conditions. Pay unit is per CUBIC YARD of material installed.
12	**16" FLANGED TEE AND GATE VALVE WELLHEAD ASSEMBLY**	Item 12 is the material cost and delivery to the project site of 16" by 16" by 10" tee with 16" bolt flange and 0.375 inch flange plate and gasket assembly, a 10' diameter tee and 24" length nipple assembly with threaded or welded to a 10" gate valve assembly to control artesian flow and wellhead discharge. Tee assembly and components will consist of heavy wall (0.375 inch), API Standard 5L Grade B steel casing or exceed 16" steel casing material standards, as approved by Engineer. Pay unit is per LUMP SUM.
13	**STEEL I-BEAM WELL SUPPORTS AND CONCRETE SLAB**	Item 13 is the material cost, delivery, and installation of two 8" by 10" by 3 feet steel I-Beams (W 8"x10"), A36 steel with 3/16" web thickness, notched and full-welded to 16" steel well casing, centered and set 2-inches from bottom of a 4' by 4' by 1' poured concrete slab (see *Well Design Drawing Detail*). Pay unit is per LUMP SUM installed.

14	**WELL COMPLETION**	Item 14 is labor and equipment costs to construct a single string welded well assembly as shown on the Well Construction Diagram and described below. Well string assembly will consist of 182 feet of 16-inch diameter steel casing listed in Item 5 placed from 2 feet above surface to a depth of 180 feet. A 16-inch to 12-inch formed steel reducer listed in Item 7 welded to casing sections at depth of 180 feet. 12-inch diameter steel casing listed in Item 6 placed from 180 feet to a depth of 410 feet. 12-inch pipe diameter stainless steel screen listed in Item 8, welded into assembly and placed from a depth of 410 feet to 490 feet. 12-inch steel casing well tail section and welded bottom cap placed from 490 feet to 500 feet. Well centralizers on a min. of 60 foot intervals welded to well casing assembly (see centering spacer detail shown on Well Construction Diagram). An artificial filter pack listed in Item 10 placed in the well annular from a depth of 500 feet to 350 feet. A poured chip bentonite annular well seal listed in Item 11 from a depth of 350 feet to ground surface. A 16-inch tee and gate valve wellhead for discharge of artesian well flow listed in Item 12 welded to casing section. Well plumbness and alignment test per ANSI/AWWA A100-97. All materials, amounts, measurements, and methods used during well construction will be recorded in a Contractor's activity log and submitted to Engineer (see *Special Conditions*). Final construction depths, materials, amounts and methods listed in the Item Schedule may vary based on subsurface conditions encountered, as approved by Engineer. Pay unit is per LINEAL FOOT installed.
15	**GEOPHYSICAL LOGGING**	Item 15 includes the material cost, labor, equipment, travel expenses, meals and lodging, and standby time to perform geophysical logging of the entire borehole (approximately 500 feet of a minimum 12-inch borehole), data interpretation, and reporting of results prior to well completion. Geophysical logging will include dual normal electric logs consisting of long (64") normal and short (16") normal, point resistivity log, and spontaneous potential curve log. Geophysical data will be compiled into down-hole logs, interpreted, and reported to determine subsurface lithology units, porosity of units, water bearing units, and aquatard units for purposes of determining final well completion by a qualified engineer, geophysicist, or geologist approved by the Engineer. The geophysical report will be submitted to the Engineer prior to the start of well completion. Pay is per LUMP SUM.

16	**WELL DEVELOPMENT**	Item 16 is development of the well by acceptable methods to effectively extract fine-grained materials or drill introduced agents from water-bearing formation(s) to bring the well to maximum yield per foot of drawdown while maintaining a sand-free condition (see *Special Conditions*). Well will be tested for sand free condition per ANSI/AWWA A100-97 or IDEQ approved analytical laboratory method. Well development includes decontaminating of the well immediately following pump testing. Decontamination should follow the AWWA Standard of Disinfection of Wells (ANSI/AWWA C654-97). Well development will be verified and approved by Engineer based inspections, testing, and results of water quality analysis. Additional development may be required pending results. Pay unit is per HOUR performed for a nominal duration of twenty four hours.
17	**INSTALL AND REMOVE TEST PUMP**	Item 17 is all costs associated with providing a temporary submersible well pumping system to successfully complete the pump test (see *Special Conditions*). This item includes labor and materials to installation and removal pump, pump motor, related pump assembly, pump column, related plumbing, electrical power supply wiring, and temporary on-site power supply. The Contractor will also provide a pipe or hose of sufficient length and diameter to dispose of pumped water to the nearest storm drain, ditch, or designated location as specified by Engineer. Pay unit is LUMP SUM.
18	**CONDUCT TEST PUMP**	Item 18 is labor, material, an equipment costs incurred to perform the pump test. The item includes pump use, generator fuel, and idle time incurred in performing a successful test. Contractor is required to operate pump equipment during test at the constant and continuous discharge capacity specified (see *Special Conditions*). Pump test time does not include breakdown and machinery repair time, logistical material collection and delivery time, or other Contractor related delays affecting any portion of the test. Minimum pump test period is twenty-four (24) continuous hours and twenty-four (24) continuous hours of monitoring water level recovery. Any test pump period of shorter duration or with unscheduled interruptions or significant deviations from the pumping requirements will not be paid unless pre-approved by the Engineer. Pay unit is per HOUR.
19	**VIDEO WELL INSPECTION**	Item 19 is a video inspection and VHS tape record of the entire well in order to inspect well construction and completion. Inspection will be performed using video camera equipment recording clear images in down-hole and side views, directed at the condition of joint welds, cased sections, screens, and filter pack to fully inspection well construction. Inspection includes providing a video tape to the Engineer for the record. Pay is per LUMP SUM.

20	**STANDBY AT WELL SITE**	Item 20 is the time charged at the hourly rate specified when the drill rig and crew are idle due to conditions resulting from actions or inaction of the Owner or Engineer during normal work periods, which cause the Contractor to discontinue progressing with the required work. Standby time does not include weekends, holidays, after hours, breaks, equipment down or repair time, logistical, material collection and delivery time, time used to convey water to the drill site, time expended retrieving lost tools or other Contractor related delays. Pay unit is per HOUR.

11. LICENSES

Idaho Public Works Contractor License No.: _____

12. BIDDER

An Individual:

By: _____
Individual's Name & Signature

A Partnership:

By: _____
Partnership Name

_____
Name & Signature of General Partner

_____
Title

A Corporation:

By: _____
Corporation Name

_____
State of Incorporation

_____

By: _____

Name & Signature of Person Authorized to Sign

_____

Title

[Corporate Seal]

A Joint Venture:

By: _____

Business Name

_____

Name & Signature of Person Authorized to Sign

By: _____

Business Name

_____

Name and Signature of Person Authorized to Sign

Each joint venturer must sign. The manner of signing each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.

All Bidders:

Name, Phone & Fax Numbers and Address for receipt of official communications and for additional information on this Bid:

_____

_____

_____

SUBMITTED ON _____, 2005.

SPECIAL CONDITIONS

MUNICIPAL WATER WELL CONSTRUCTION:

670.1. INTRODUCTION:

These specifications describe the materials, construction and performance standards of a proposed municipal water-supply well for the City of Eagle to be constructed by Eagle Sports Development LCC, Eagle, Idaho. The well site is located in the NE¼, NW¼ of Section 11, T4N, R1W on the Quarter Circle DJ Ranch.

670.2. DRILLING CONDITIONS:

A. Drilling will be performed using a reverse circulation rotary drilling method with water or drilling mud as required and approved by the Engineer. Drilling water will be supplied as specified in 670.13 E. - "Other Special Conditions". The borehole will have a minimum diameter of 28 inches drilled to a depth of 190 feet and a minimum of 24 inch diameter drilled from 190 to 500 feet. Prior to beginning work Contractor will provide sufficient information to Engineer for assurance that equipment and knowledge is available for successfully completing the proposed well.

B. Subsurface geologic conditions may be approximated from attached drilling logs.

C. Drill rejects, mud, additives, and other drill byproducts shall be confined to pits, sediment basins, or separator system and not allowed to enter surface waters or migrate off-site.

D. The site is located in a agricultural area. The Contractor is responsible for providing a physical means of limiting access to the work area for public safety during and after operating hours. Noise should be minimized and confined to normal working days and hours as defined by the Engineer.

E. Site well be cleaned and excavations filled as approved by Engineer.

670.3. CONSTRUCTION:

A. All construction and materials shall be in conformance with the latest version of the Idaho Standards of Public Works (ISPWC), Idaho Department of Environmental Quality Well Construction Design Checklist (IDEQWCDC), Regulations for Public Drinking Water Systems (Idaho Department of Health and Welfare), and Idaho Department of Water Resources Well Construction Standards (IDWRWCS) (IDAPA 37, Title 03, Chapter 09). Any conflicts with the ISPWC, IDEQWCDC, or IDWRWCS and these documents, the referenced regulatory documents take precedence.

B. The well is anticipated to produce sand-free water (less than two ppm sand by weight) at a minimum rate of 1500 gpm. The well is design for eighty feet (80') of twelve inch (12") ID, thirty (30) slot screen with a maximum screen capacity of 2009 gpm based on a maximum screen entrance velocity of 0.1ft/sec. This well

accordance with all current Rules and Regulations for Well Construction Standards as prepared by the State of Idaho, Department of Water Resources and the Water Resources Board (IDAPA 37, Title 03, Chapter 09) and IDEQ public water system well construction design standards. The well seal shall consist of ¾-inch solid bentonite, Course EnviroPlug® manufactured by WyoBen, or equivalent as approved by Engineer. Material must be NSF approved. Sufficient material will be provided on-site (plus 50 percent) to construct a seal from the top of artificial filter pack to ground surface. Bentonite seal will be installed by slowly and continuously pouring material into well annular, while the level is tag line measured and volume is calculated to detect material bridging. Chip bentonite material will be sieve screened as need to remove fines prior to down-hole placement. If material bridging occurs, a bentonite grout seal will be installed using a pumped positive pressure displacement method. Bentonite grout material will consist of a minimum of 30% solids by weight. The Contractor will give advanced notification so that the Engineer can be present to visually inspect installation of the well seal.

670.6. WELL SCREENS:

A. The well screen(s) and attached end fittings shall be NSF 61 approved and fabricated from a corrosion resistant type 304 stainless steel. The well screens shall be of continuous slot, wire-wound design, in order to provide maximum inlet area consistent while meeting the strength requirements of the well design. Fabrication shall be circumferentially wrapped, triangular-shaped wire around a circular array of internal rods. The wire configuration must produce inlet slots with sharp inner edges, widening outwardly so as to minimize clogging. For maximum collapse strength, each juncture between the horizontal wire and the vertical rods will be fusion welded under water by an electrical resistance method. End fittings will be welded to the screen body. The well screen shall be manufactured by Johnson Screen Division, UOP, Houston Well Screen Company, Houston Texas, or equivalent, as approved by Engineer.

B. The screen slot size and artificially introduced filter pack material will be selected by the Contractor and approved by the Engineer on the basis of a mechanical sieve analysis of samples collected from water bearing formations, visual inspection of lithology samples, geophysical logs, and subsurface conditions encountered. Selection of screen sizing and location are the responsibility of the Contractor but require review and approval of the Engineer prior to ordering and installation. The screen diameter, length and wire slot size will be chosen so that the average velocity of the water entering the screen does not exceed 0.1 foot per second at the sustained yield specified in the section on "Construction" (670.3.B.) of the *Special Conditions*.

670.7. CASING:

A. Permanent casing shall be seamless, standard weight with 0.375 inch wall, API Standard 5L Grade B steel in new condition as shown on the well design drawing and listed in Bid Items. Casing shall be joined by fully penetrating welds without voids, cracks, excess slag or other visible weaknesses, which would impair strength or transmit water leakage. Welding methods and welds will meet AWS Pipe Welding Standards.

4. once every 2 minutes during the 20 to 60 minute period of the test,
5. once every 5 minutes during the 60 to 120 minute period of the test,
6. once every 10 minutes during the 2 to 3 hour period of the test,
7. once every 30 minutes during the 3 to 4 hour period of the test, and
8. once each hour for the remainder of the test.

The time at which the pump is turned off must be recorded and well recovery measurements are to begin immediately, employing the same time interval schedule specified for drawdown. Deviation from this schedule must be pre-approved by the Engineer.

670.11. SAFETY:

The Contractor is responsible for all safety practices and precautions related to this project (see section 670.2.D. - "Drilling Conditions").

670.12. CLEANUP:

The Contractor will provide site control of equipment, materials, and personnel according to OHSA and IDEQ standards. The contractor will provide a secure site that includes temporary fencing for safety, storage, and handling of materials related to the project. It is the Contractor's responsibility to backfill pits or holes using native material in compacted lifts of not more than two-foot thick. Drilling muds, contaminated drill cuttings, or other drilling byproducts that are unsafe or unsuitable for burial and re-compaction shall be removed and legally disposed of offsite. The Contractor shall remove all equipment, trash, debris, and Contractor-owned materials from the site upon completion of the project, as a condition of final acceptance. Trash will be disposed of properly. Burning materials is not permitted at the site.

670.13. OTHER CONSTRUCTION SPECIFICATIONS:

A. Tools, bits, hammers, temporary casing, casing shoes or other Contractor-owned equipment lost down-hole or damaged is not eligible for compensation by Owner. The Contractor will bear cost resulting from equipment damage, loss or retrieval.

B. A well construction diagram is provided at the end of this section. The well dimensions and configuration are subject to change pending drill results. Well completion materials will be assembled as a single welded string assembly in the following general order starting from the bottom of the well:

- 3/8-inch thick steel endcap,
- 10 feet of 12" steel casing (0.375" wall),
- 80 feet of stainless steel, 0.030-slot, wound wire screen (pending drilling results),
- 230 feet of 12" steel casing (0.375" wall),
- 16-12 inch steel casing reduction flange (0.375" wall)
- 182 feet of 16" steel casing (0.375" wall) with 2 feet above ground
- 150 lineal feet of Colorado Silica Sand® or approved equivalent artificial filter placed in well annular,
- 350 feet of WyoBen Course EnviroPlug® ¾" chip bentonite or approved equivalent poured in well annular,
- Wellhead artesian flow control assembly, and
- Concrete wellhead slab with welded steel I-beam supports.

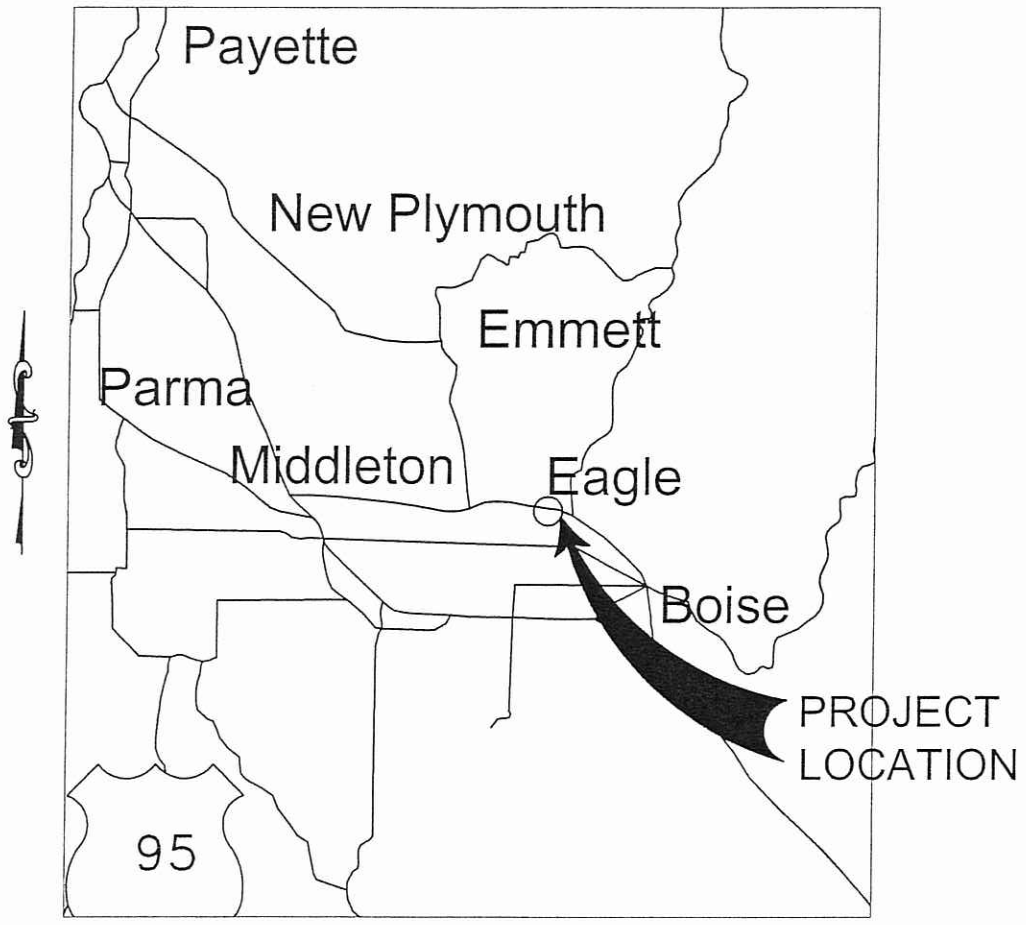
H. Contractor must hold a current public works license in the State of Idaho, water well drillers license from the Idaho Department of Water Resources. Performance and payment bonds as required for this project.

I. The Engineer will secure a drill permit for a public water system supply well from the Idaho Department of Water Resources. The approved pans and specifications will be furnished to the Contractor prior to commencing equipment mobilization.

J. Owner will provide the Contractor with a valid water right or IDWR authorization for the construction of this point of diversion prior to the start of construction.

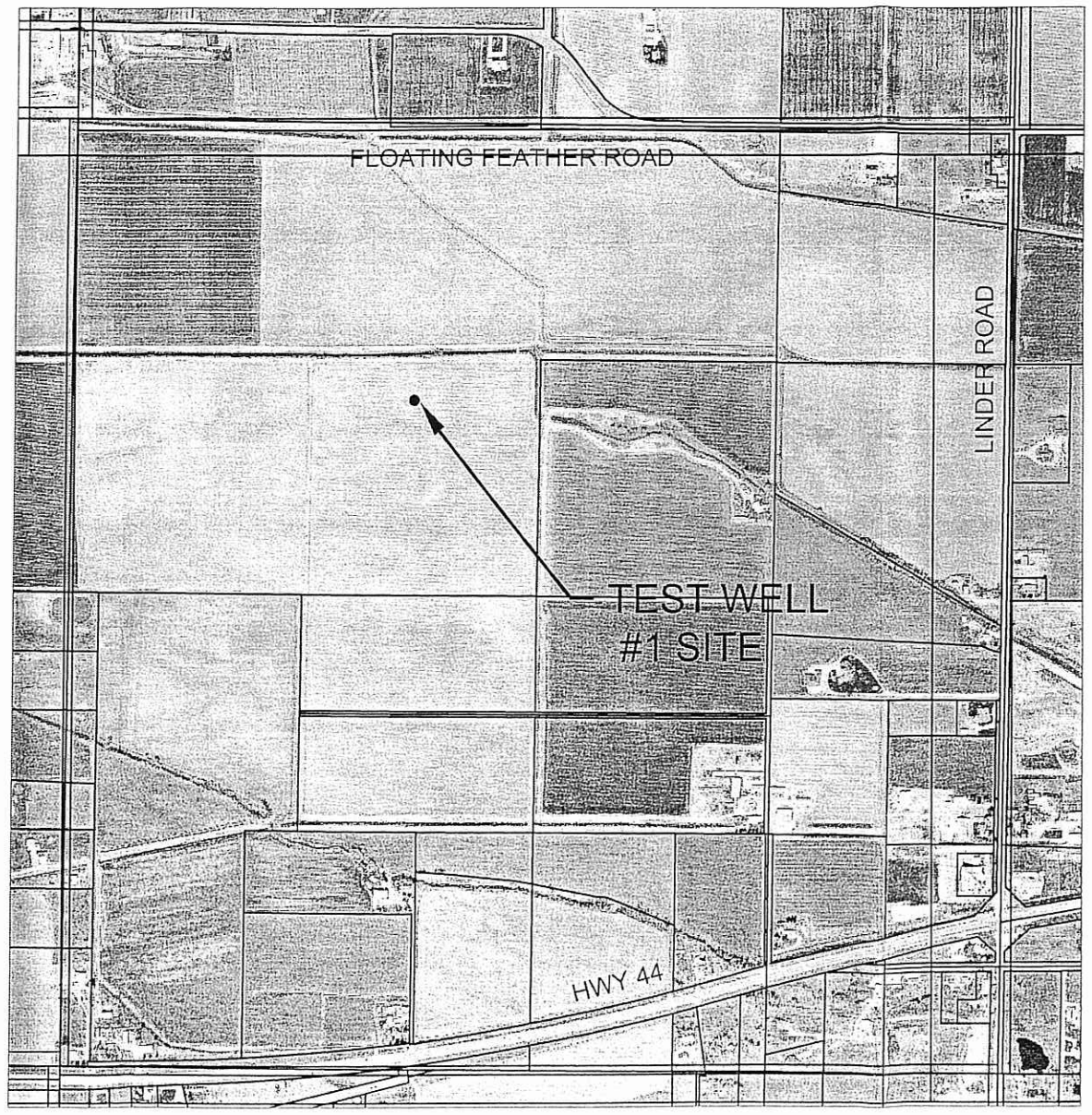
SPECIAL CONDITIONS END

EAGLE TEST WELL NO. 1
EAGLE SPORTS DEVELOPMENT, LLC



VICINITY MAP

NOT TO SCALE



PROJECT MAP

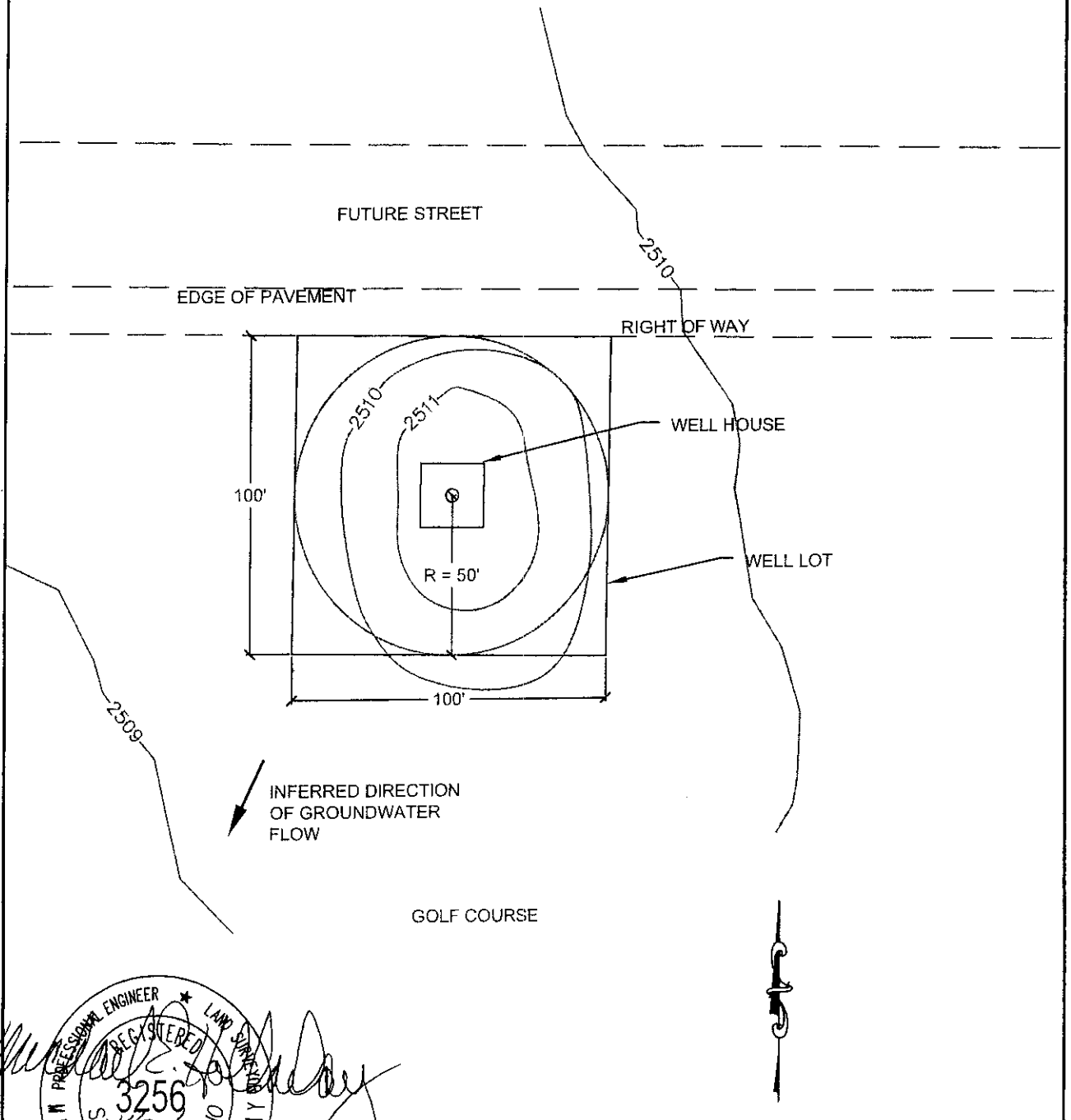
1 INCH = 1000 FT

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 FAX (208) 642-2159
EMAIL: holladayeng@msn.com

VICINITY & PROJECT MAPS
EAGLE TEST WELL NO. 1
EAGLE SPORTS DEVELOPMENT, LLC

JOB NO:	EG 061204
CADD FILE:	G:\EG\061204\AQUIFER TEST\TW-1-Mulberg
DATE:	12-01-05
REVISED:	
PLOTTED:	12-01-05
DRAWN BY:	JLJ
CHECKED BY:	CHD
SHEET	

REGISTERED PROFESSIONAL ENGINEER
MICHAEL ELDON HOLLADAY
3256
STATE OF IDAHO
11/30/05

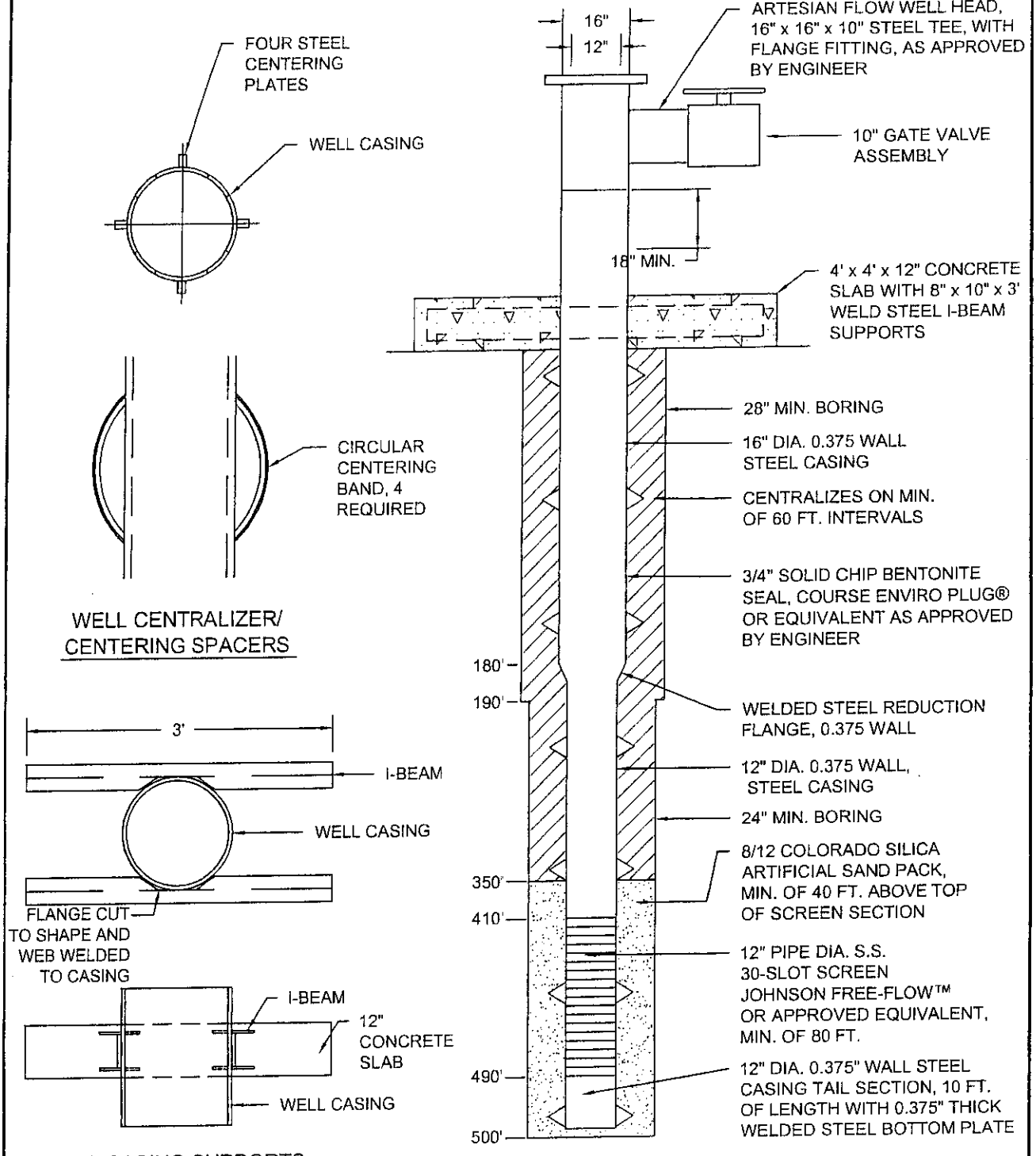


PROFESSIONAL ENGINEER
REGISTERED
3256
STATE OF IDAHO
MICHAEL ELDON HOLLADAY
LAND SURVEYOR

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 FAX# (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO:
DATE:
REVISED:
PLOTTED:
DRAWN BY: PAM
CHECKED BY:



NOTES:

1) ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VARY PENDING DRILL RESULTS.
2) EST. SCREEN FLOW CAPACITY IS 4.46 CFS (2,009 GPM).
3) STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 10-20 PSI OF PRESSURE.
4) WELL CONSTRUCTION MUST MEET IDEQ PUBLIC DRINKING WATER CONSTRUCTION STANDARDS.

REGISTERED PROFESSIONAL GEOLOGIST
11/29/05
CHRIS H. DUNCAN
1046
STATE OF IDAHO

NOT TO SCALE

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX (208) 642-2159
EMAIL: hec@holladayengineering.com

TEST WELL NO. 1
CITY OF EAGLE, IDAHO

JOB NO:	EG 061204
DATE:	11/03/05
REVISED:	11/15/05
DRAWN BY:	JLJ
CHECKED BY:	CHD

UNITED WATER Idaho MONITORING WELL 1 of 8

RECEIVED
OCT 28 1997
Department of Water Resources

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0633-801
Other IDWR No. _____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11, N/E 1/4 (10 acres) S/E 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St & Linder
(Hope Luth Church) City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☒ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test well

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☒ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			~~see drawing for pipe information~~		

RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

MICROFILMED
JAN 09 1998

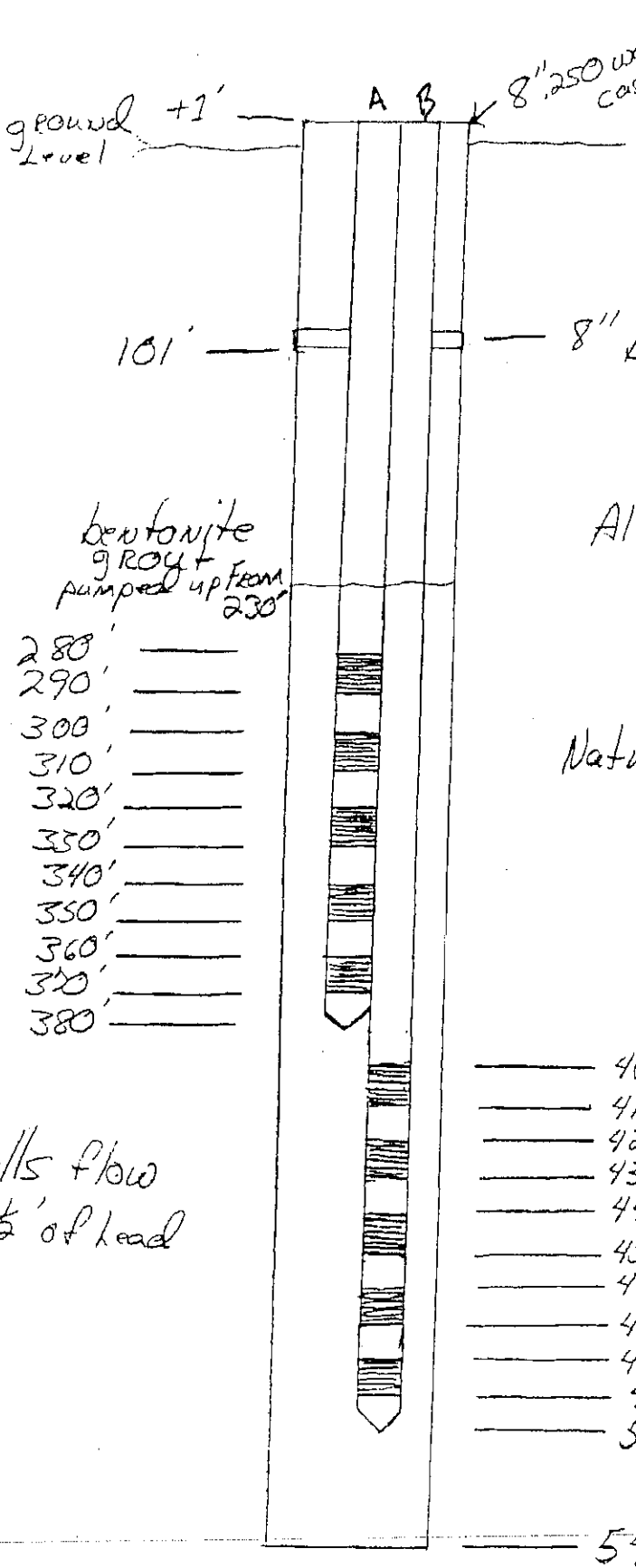
Completed Depth 845 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official _____ Date _____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

United Water State & Linder 63-97-W-0633-801
test Well #1 67931



RECEIVED
OCT 23 1997
WATER REBOURCES
WESTERN REGION

AFTER CIRCLE D.J. RANCH No. 6

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

RECEIVED

1. WELL OWNER

Name Currier Circle D.J. Ranch

Address Star, Idaho (Home Place)

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 16 inches Total depth 406 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	16 inches	1'8" feet	253 feet
.250 inches	10 inches	223 feet	406 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☒ Factory ☐ Knife ☐ Torch

Size of perforation 3/16 inches by 3 inches

Number		From	To
5,152	perforations	234 feet	395 feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☒ Yes ☐ No Size of gravel 3/8 minus 30 yds.

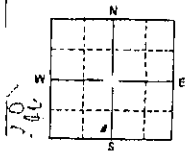
Placed from 223 feet to 406 feet

Surface seal depth 22 Material used in seal ☒ Cement grout ☐ Puddling clay ☐ Well cuttings

Sealing procedure used ☐ Slurry pit ☒ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County Ada

S/E ¼ S/W ¼ Sec. 2 T. 4 N/S R. 1 E/W

7. WATER LEVEL

Static water level feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☒ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG 40055

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
16"	0	3	Top Soil		X
"	3	12	Light clay and sand		X
"	12	27	Fine sand, some clay	X	
"	27	105	Blue clay		X
"	105	240	Sand with clay binder	X	
"	240	260	Sticky brown clay		X
"	260	295	Sand, ~~some small layers~~ of clay	X X	
"	295	318	Sticky brown clay		X
"	318	380	Sand, ~~some small layers~~ of clay	X X	
"	380	404	Sand, some clay	X	
"	404	406	Sticky light brown clay		X
			Gravel pack		
			30 yds. of 3/8 minus gravel		
			10" shoe on top of liner		
			15" shoe on bottom of liner		
			NOT TESTED AS OF 2/20/74		

10. Work started Nov. 28/73 finished Dec. 30, 73

11. DRILLERS CERTIFICATION

Firm Name W. E. Stevens & Sons Firm No. 153

Address 3709 Hawthorne Drive Date 1/30/74

Signed by (Firm Official) Wayne E. Stevens

and

(Operator) David

MICROFILMED

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

421.0010
Well Cons.

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 N. Orchard • Boise, Idaho 83706 • (208) 373-0550

Dirk Kempthorne, Governor
Toni Hardesty, Director

February 1, 2006

Peter Harris
Eaglefield, LLC
6951 Duncan Lane
Eagle, ID 83614

RE: City of Eagle Well No. 4 (Eaglefield Estates) – Well Site Evaluation (Eagle, Ada County)
A. Well Site Conditional Approval
B. Groundwater Under Direct Influence of Surface Water (GWUDI) Determination
C. Future Federal Regulations

Dear Mr. Harris:

I. WELL SITE CONDITIONAL APPROVAL

Your consultant has submitted the required information on the well site and has certified that the site is generally acceptable for a new Public Water System well. We have reviewed that information and are approving the site per the *Idaho Rules for Public Drinking Water Systems* (IRPDWS), Section 550.03.n, subject to the following conditions:

II. STANDARD CONDITIONS

A. The approval is for the well site only. Construction of the well, pump house, and distribution system components cannot begin until plans and specifications are approved by the Department of Environmental Quality (DEQ). The plans, specifications, and related documents will have to verify and augment the data provided in the initial Well Site Evaluation, ensuring full conformance to the IRPDWS. The design package needs to include at least the following:

1. General Checklist.
2. Water System Checklist.
3. Documentation showing the well lot is owned in fee simple or controlled by a lease (IRPDWS 550.03.m).
4. Well logs from nearby wells (used to determine approximate depth of the well seal).
5. Well schematic and specifications for drilling and disinfection.
6. Other items required per the checklists.
7. Other site specific items deemed appropriate by the consultant.
8. An evaluation of how disinfection and contact time would be installed, should that prove necessary (please see Item A below).

DEQ will conduct a concurrent review with Idaho Department of Water Resources (IDWR); we recommend that your engineer contact IDWR early regarding the well design and drilling program. The IDWR contact is Rob Whitney at 334-2190.

B. To assist you in obtaining a timely review of this project, please avoid the following errors that have been found in recent plans, specifications, and related documents:

1. Improper separation distances between the well and pavement, property lines, and public easements.
2. Failure to divert runoff as far from the wellsite as practical (minimum of 50 feet).
3. Improper use of the well site for parking and storage of inappropriate materials (petroleum products, chemicals, etc).

C. New source monitoring will need to be collected by the owner, tested by a certified laboratory, and approved by DEQ; before the water may be distributed to the public. The detailed list of parameters that need to be tested will be forwarded when the well construction is approved.

D. This approval will be voided if: 1) construction is not completed by February 1, 2007; 2) the project is improperly constructed, operated, or maintained; or 3) the project fails to function as intended.

D. No significant deviations can be made from the approved plans without DEQ's prior written approval.

III. GROUNDWATER UNDER DIRECT INFLUENCE OF SURFACE WATER (GWUDI)

Idaho is required by federal drinking water regulations to determine whether groundwater sources serving public drinking water systems are directly influenced by surface water. "Groundwater Under the Direct Influence of Surface Water" (GWUDI) may contain disease causing organisms which are normally found only in surface water, and may require additional treatment including filtration and/or disinfection and contact time.

From our review of the materials submitted for this project, we have classified this source as:

☐	**"Groundwater"**	No further action is necessary
☒	**"Potentially Groundwater Under Direct Influence of Surface Water"**	Although unlikely, this source could be shown in the future to be vulnerable to biological contamination. In that case, treatment and additional monitoring requirements would be necessary to protect public heath.
☐	**"Groundwater Under Direct Influence of Surface Water".**	This source is subject to biological contamination and treatment is required as discussed below:

Please call Brandon Lowder of this office 373-0550 with any questions on the classification.

IV. COMMENTS FOR YOUR CONSIDERATION

You should be aware that future federal regulations could affect the design and operation of water systems utilizing groundwater sources.

A. The proposed "Groundwater Disinfection Rule" will evaluate groundwater sources that are not under the direct influence of surface water, for vulnerability to microbial contamination. If a source is found to be vulnerable, it may be necessary to install disinfection and contact time prior to distribution to the first customer. To provide for that possibility, the planning and layout of the facility needs to include an evaluation of the how the system could be modified to supply an equivalent 30 minute contact time with a minimum residual of 0.2 parts per million of free chlorine.

B. The proposed "Disinfectants-Disinfection By-Products Rule" will regulate certain compounds that are formed when disinfectants combine with certain naturally occurring, organic constituents in water. Both these rules are still under development and are subject to change.

Please call me with any questions at (208) 373-0514 or contact me via e-mail at sondra.miller@deq.idaho.gov.

Sincerely,

Sondra M. Miller, Ph.D. E.I.T.
Associate Engineer

SMM:vee: G:\Engineering\Sondra\Approval Letters\Wells\Eagle Well No. 4\APR Eagle Well No. 4-Well Site Evaluation-01Feb06.doc

cc: Charles W. Ariss, P.E., Regional Engineering Manager, Boise Regional Office
Jennifer S. Sukow, P.E., SPF Water Engineering, LLC
Rob Whitney,.IDWR-Boise Field Office
Source File 1 Eng, City of Eagle Well No. 4 (Eaglefield Estates), Manager's File, Reading File

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

7747-06

1445 N. Orchard • Boise, Idaho 83706 • (208) 373-0550

Dirk Kempthorne, Governor
Toni Hardesty, Director

February 1, 2006

Peter Harris
Eaglefield, LLC
6951 Duncan Lane
Boise, ID 83714

RE: City of Eagle Well No. 4 (Eaglefield Estates) – Well Construction Specifications (Eagle, Ada County)
A. Well Conditional Approval
B. Groundwater Under Direct Influence of Surface Water (GWUDI) Determination
C. Future Federal Regulations

Dear Mr. Harris:

The specifications for the subject project appear to meet State of Idaho standards and are conditionally approved as noted below

I. STANDARD CONDITIONS

A. All conditions of this letter must be met. The standard conditions on the Department of Environmental Quality (DEQ) review stamp are part of this approval. Supporting reports or documents are considered to be part of the approved documents.

B. No work may begin until a copy of this approval letter and the plans and specifications bearing the DEQ approval stamp are delivered to and kept on the job site. As the project owner, you must ensure that the contractor, the construction inspector, and the certifying engineer are aware of the approval conditions.

C. This approval will be voided if: 1) construction is not completed by February 1, 2007; 2) the project is improperly constructed, operated, or maintained; or 3) the project fails to function as intended.

D. No significant deviations can be made from the approved plans without DEQ's prior written approval.

E. Per the project documents, the Land Developer or Owner or his representative shall ensure that a professional engineer with SPF Water Engineering, LLC provides supervision of construction and written documentation as follows.

E. Per the project documents, the Land Developer or Owner or his representative shall ensure that a professional engineer with SPF Water Engineering, LLC provides supervision of construction and written documentation as follows.

F. Within thirty days (30) after completion of construction, the Land Developer or Owner or his representative shall provide DEQ with one of the following documents.

G. The *Application For Drilling Permit* from IDWR contains conditions that are an essential part of the subject plans and specifications. A copy of the *Application For Drilling Permit* and the DEQ approved plans and specification must be maintained at the drill site.

H. The project engineer must stake where the well will be drilled in accordance with the DEQ approved well site plan.

I. Before drinking water may be distributed to the public:

1. Water samples must be collected and tested by a certified laboratory. Testing shall include the parameters on the attached list. Those results must be sent to the Drinking Water Compliance section of this office for review and approval. We will be advised when that process is complete.

2. Documentation that the project was completed as approved must be submitted to me for review and approval. We will advise you if a sanitary survey will be conducted before the water may be distributed to the public.

J. The approval applies only to the drilling of the <u>well only</u>. Separate plans and specifications for the pump, pumphouse, and appurtenances must be approved by DEQ prior to construction. The design package needs to include at least the following:

1. General Plan and Specification Review Checklist
2. Well House and Equipment Design Checklist
3. Water System Checklist.
4. Other DEQ checklists as needed; other items per state rules, or standards; or site specific items deemed appropriate by the consultant.
5. An evaluation of how disinfection and contact time would be installed, should that prove necessary.

K. New source monitoring will need to be collected by the owner, tested by a certified laboratory, and approved by DEQ; before the water may be distributed to the public. A detailed list of parameters that need to be tested is attached.

II. GROUNDWATER UNDER DIRECT INFLUENCE OF SURFACE WATER (GWUDI)

Idaho is required by federal drinking water regulations to determine whether groundwater sources serving public drinking water systems are directly influenced by surface water. "Groundwater Under the Direct Influence of Surface Water" (GWUDI) may contain disease causing organisms which are normally found only in surface water, and may require additional treatment including filtration and/or disinfection and contact time.

From our review of the materials submitted for this project, we have classified this source as:

☐	**"Groundwater"**	No further action is necessary
☒	**"Potentially Groundwater Under Direct Influence of Surface Water"**	Although unlikely, this source could be shown in the future to be vulnerable to biological contamination. In that case, treatment and additional monitoring requirements would be necessary to protect public heath.
☐	**"Groundwater Under Direct Influence of Surface Water".**	This source is subject to biological contamination and treatment is required as discussed below:

Please call Brandon Lowder of this office 373-0550 with any questions on the classification.

III. COMMENTS FOR YOUR CONSIDERATION

You should be aware that future federal regulations could affect the design and operation of water systems utilizing groundwater sources.

A. The proposed "Groundwater Disinfection Rule" will evaluate groundwater sources that are not under the direct influence of surface water, for vulnerability to microbial contamination. If a source is found to be vulnerable, it may be necessary to install disinfection and contact time prior to distribution to the first customer. To provide for that possibility, the planning and layout of the facility needs to include an evaluation of the how the system could be modified to supply an equivalent 30 minute contact time with a minimum residual of 0.2 parts per million of free chlorine.

B. The proposed "Disinfectants-Disinfection By-Products Rule" will regulate certain compounds that are formed when disinfectants combine with certain naturally occurring, organic constituents in water. Both these rules are still under development and are subject to change.

Please call me with any questions at (208) 373-0514 or contact me via e-mail at sondra.miller@deq.idaho.gov.

Sincerely,

Sondra M. Miller, Ph.D. E.I.T.
Associate Engineer

SMM:vee: G:\Engineering\Sondra\Approval Letters\Wells\Eagle Well No. 4\APR Eagle Well No. 4-Well Construction Specifications-01Feb06.doc

Enclosures: One Set(s) of Approved and Stamped Specifications
New Source Monitoring Requirements for Community Public Drinking Water Systems

cc: Charles W. Ariss, P.E., Regional Engineering Manager, Boise Regional Office
Jennifer S. Sukow, P.E., SPF Water Engineering, LLC (w/approved and stamped specifications)
Rob Whitney,.IDWR-Boise Field Office
Source File 1 Eng, City of Eagle Well No. 4 (Eaglefield Estates), Manager's File, Reading File

NEW PUBLIC WATER SYSTEM WELL SITE EVALUATION AND WELL SPECIFICATION SUBMITTAL

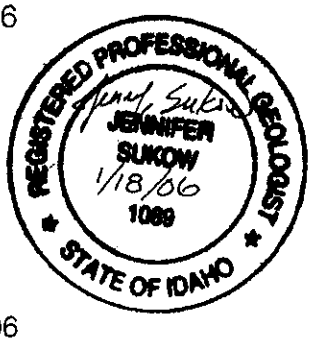
CITY OF EAGLE WELL NO. 4
GOLDEN CROWN WAY AND TATLOCK DRIVE
EAGLEFIELD ESTATES SUBDIVISION
EAGLE, IDAHO

Prepared for

Eaglefield, LLC
c/o Peter Harris
6951 Duncan Lane
Eagle, ID 83714

Prepared by

SPF Water Engineering, LLC
600 East River Park Lane
Boise, ID 83706



January 18, 2006

SPF Water Engineering, LLC
water resource consultants

Table of Contents

1. INTRODUCTION

1.1. Project Description

Eaglefield, LLC is proposing to develop a new residential subdivision within the City of Eagle. Eaglefield, LLC is proposing to construct a new public water supply well (Well No. 4) and pumping facility, which will be connected to the City of Eagle's municipal distribution system. Eaglefield, LLC will convey ownership of the well and pumping facility to the City under a development agreement. The City will own and operate the new well and pumping facility as part of the municipal water system.

1.2. Project Location

The project site is located in the NW ¼ of the SE ¼ of Section 11, Township 4 North, Range 1 West in Eagle, Idaho, approximately ½ mile north of State Street and ½ mile west of Linder Road. The well lot will be located near the intersection of proposed streets Golden Crown Way and Tatlock Drive. Figure 1 (Appendix A) shows the location of the proposed subdivision and well lot.

1.3. Report Organization

Because the City of Eagle's application for a new water right permit has been protested, Eaglefield, LLC is planning to construct Well No. 4 as a test well, which will be used to collect data needed to address the water right protest. Eaglefield, LLC intends to construct the well to public water system standards, so that the well can be conveyed to the City and used as a public water supply well if the water right permit is approved. Eaglefield, LLC will secure a bond in favor of IDWR to ensure proper abandonment of the well if the water right permit is not approved.

This report includes the well site evaluation, the DEQ well site evaluation checklist, conceptual well construction plans, and well construction specifications. An engineering report and well house plans and specifications will be submitted at a later date, following resolution of water right permitting issues.

2.2.5. Surrounding Land Use

Land use surrounding the proposed well site is currently agricultural. A recent aerial photograph of the surrounding area is shown in Figure 5 (Appendix A). During the site visit on January 11, 2006, the proposed well site and surrounding land were plowed fields as shown in the site photographs in Appendix C.

After development of the Eaglefield Estates subdivision, surrounding land use will include residential lots, streets, and common areas. Land use adjacent to the well lot will include Tatlock Drive to the north, a common area and Golden Crown Way to the east, and residential lots to the south and west. Sewer service for the residential lots will be provided by the Eagle Sewer District.

2.2.6. Anticipated Production Rate

The anticipated design pumping capacity is approximately 1,800 gpm. It is anticipated that the well pump will be equipped with a variable frequency drive to meet a range of water system demands.

2.2.7. Soils and Lithology

According to the Soil Survey of Ada County Area, Idaho (Collett, 1977), soils underlying the well site are classified as Bram silt loam. This soil type generally consists of silt loam and very fine sand loam. This soil type formed in mixed alluvium on low alluvial terraces adjacent to the Boise River, with slopes between 0 and 2 percent. Bram soils are described as deep and somewhat poorly drained, with permeability typically ranging from 0.2 to 0.6 inches per hour.

According to the geologic map of the Boise Valley prepared by Othberg and Stanford (1992), the well site is underlain by the Gravel of Boise Terrace, which is the first terrace above the Boise River floodplain (Appendix A, Figure 6). The Gravel of Boise Terrace typically consists of sandy pebble and cobble gravel, and is typically 10 to 45 feet thick. The gravel is typically covered with a thin mantle of loess. The Gravel of Boise Terrace is underlain by older Quaternary and Tertiary basin-fill sediments, which typically consist of unconsolidated interbedded sand, silt, and clay layers (Othberg, 1994). The thickness of the basin-fill sediments is expected to be greater than 1,000 feet in this area (Whitehead, 1986).

Well drillers' logs for wells located with ½ mile of the subject site indicate that the subsurface lithology in this area generally consists of 2 to 8 feet of silt and clay overlying sand and gravel. The sand and gravel typically extends to depths of 20 to 40 feet below ground surface, and is underlain by interbedded sand, silt, and clay. Well driller's logs located within 2 miles of the subject site indicate that the interbedded sand, silt, and clay unit extends to depths of greater than 980 feet. Drillers' logs for 13 wells located within ½ mile of proposed Well No. 4 are included in Appendix B. A well location map is also included in Appendix B. Well locations are based on IDWR records, and have not been field verified.

ranged from 2.6 to 33.1 pCi/L. These data suggest that water-bearing zones within the elevation range of 2,300 to 2,450 feet are likely to have alpha particle concentrations approaching or exceeding the MCL. Alpha particle concentrations in the deepest well, which obtains water from a depth of approximately 420 to 460 feet (elevation of approximately 2,100 to 2,140 feet), ranged from 0.6 to 1.7 pCi/L. The anticipated target production zone for proposed Well No. 4 is between 300 and 450 feet (approximately 2,060 and 2,210 feet in elevation).

Iron and manganese concentrations exceeding secondary MCLs were measured in the shallowest well (32 feet deep) and the two deepest wells. The deepest well (462 feet deep) had iron concentrations ranging from 0.08 to 0.31 mg/L, slightly exceeding the secondary MCL of 0.30 mg/L during one sampling event. The deepest well also had manganese concentrations ranging from 0.10 to 0.17, exceeding the secondary MCL of 0.05 mg/L during all sampling events.

Although there are not primary or secondary MCLs for ammonia, if chlorination is used, the process will be affected by ammonia. The presence of ammonia will increase the chlorine demand and the level of process management required. Ammonia concentrations ranging from 0.09 to 0.33 mg/L were measured in the 462-foot deep well, and may be high enough to affect chlorination. Ammonia concentrations were less than 0.05 mg/L in other wells, with the exception of the 32-foot deep well, which had ammonia concentrations ranging from 0.09 to 0.14 mg/L.

SPF Water Engineering consulted with DEQ Environmental Hydrogeologist, Dennis Owsley on December 28, 2005, regarding regional water quality issues. Information provided by DEQ is included in Appendix E. Several potential contaminant sources are located up-gradient and within 3.5 miles of the proposed well site, but DEQ's database did not show contaminant plumes within that area. DEQ's database indicates that the site is located within a Pesticide Priority Area. It is anticipated that Well No. 4 will be constructed with a surface seal extending to approximately 300 feet, which is expected to protect the well from surficial and shallow subsurface contamination.

Based on available data, it appears that iron and manganese concentrations exceeding the secondary MCLs might be encountered in the target production zone for Well No. 4. To improve aesthetic water quality, chemical injection or treatment may be needed to sequester or remove iron and manganese. An elevated ammonia concentration, which may affect chlorination processes, is also likely to be encountered in the target production zone.

Radiological constituents, arsenic, nitrate, and pesticides are also potential water quality concerns, but available data suggest that these parameters are likely to be below primary MCLs in the target production zone for Well No. 4.

The well will be completed at a sufficient depth to obtain groundwater that is not under the direct influence of surface water. It is anticipated that the annular seal will extend to a depth of approximately 300 feet and through one or more clay layers.

2.2.14. Other Potential Well Sites

The proposed well site meets setback requirements from features of concern and will be located on a designated well lot. Alternative well sites within the Eaglefield subdivision are not being considered.

2.3. Proximity to Potential Sources of Contamination

A site map showing the proposed well locations and existing potential sources of contamination within 500 feet is included in Figure 7 (Appendix A). Proposed future land use within 500 feet of the well site is shown in Figure 2 (Appendix A). Potential sources of contamination located within 500 feet include existing irrigation laterals and drainage ditches. Irrigation laterals and drainage ditches within the project boundary will be eliminated during construction of the subdivision and replaced with a pressurized irrigation system and appropriate stormwater drainage.

Well lot boundaries will provide a minimum 50-foot setback distance from the adjacent common area, roadways, and residential lots. Sewer mains, storm drains, and other utility lines will not be located within the well lot (with the exception of utility lines required for operation of well pumping facilities).

2.4. Professional Opinion

The proposed well site is an acceptable location for a public water supply well. Existing irrigation laterals and drainage ditches within the project boundary will be eliminated and replace with a pressurized irrigation system during construction of the Eaglefield subdivision. Other potential sources of contamination were not identified within 500 feet of the proposed well site. The well will be completed at a sufficient depth to obtain groundwater that is not under the direct influence of surface water. It is anticipated that the annular seal will extend to a depth of approximately 300 feet and through one or more clay layers.

Available data from wells located near the site indicate that water quality meets primary standards in the target production zone, but may have iron and manganese concentrations exceeding secondary standards. Data collected from wells completed above the target production zone indicate that primary water quality parameters, including alpha particles, arsenic, and nitrate exceed standards in many shallow wells in this area. The well will target a production zone at a depth exceeding 300 feet to increase the potential for obtaining water that meets primary drinking water standards. Sequestering or removal of iron and manganese may be

5. REFERENCES

Collett, R.A., 1977, *Soil Survey of Ada County Area, Idaho.* United States Department of Agriculture, Soil Conservation Service, 327 pages, 72 plates.

FEMA, 2003, *Flood Insurance Rate Map, Ada County, Idaho and Incorporated Areas.* Federal Emergency Management Agency, Map Number 16001C0135 H, Panel 135 of 875.

Othberg, K.L. and L.R. Stanford, 1992, *Geologic Map of the Boise Valley and Adjoining Area, Western Snake River Plain, Idaho.* Idaho Geological Survey Press, Geologic Map Series, Scale 1:100,000, 1 plate.

Othberg, K.L., 1994, *Geology and Geomorphology of the Boise Valley and Adjoining Areas, Western Snake River Plain, Idaho.* Idaho Geological Survey Press, Bulletin 29, 54 pages.

Petrich, C.R. and S.M. Urban, 2004, *Characterization of Ground Water Flow in the Lower Boise River Basin.* University of Idaho, Idaho Water Resources Research Institute Research Report, IWRRI-2004-01.

Whitehead, 1986, *Geohydrologic Framework of the Snake River Plain, Idaho and Eastern Oregon, 1:1,000,000.* U.S. Geological Survey, Atlas HA-681, 3 plates.

APPENDIX A

FIGURES

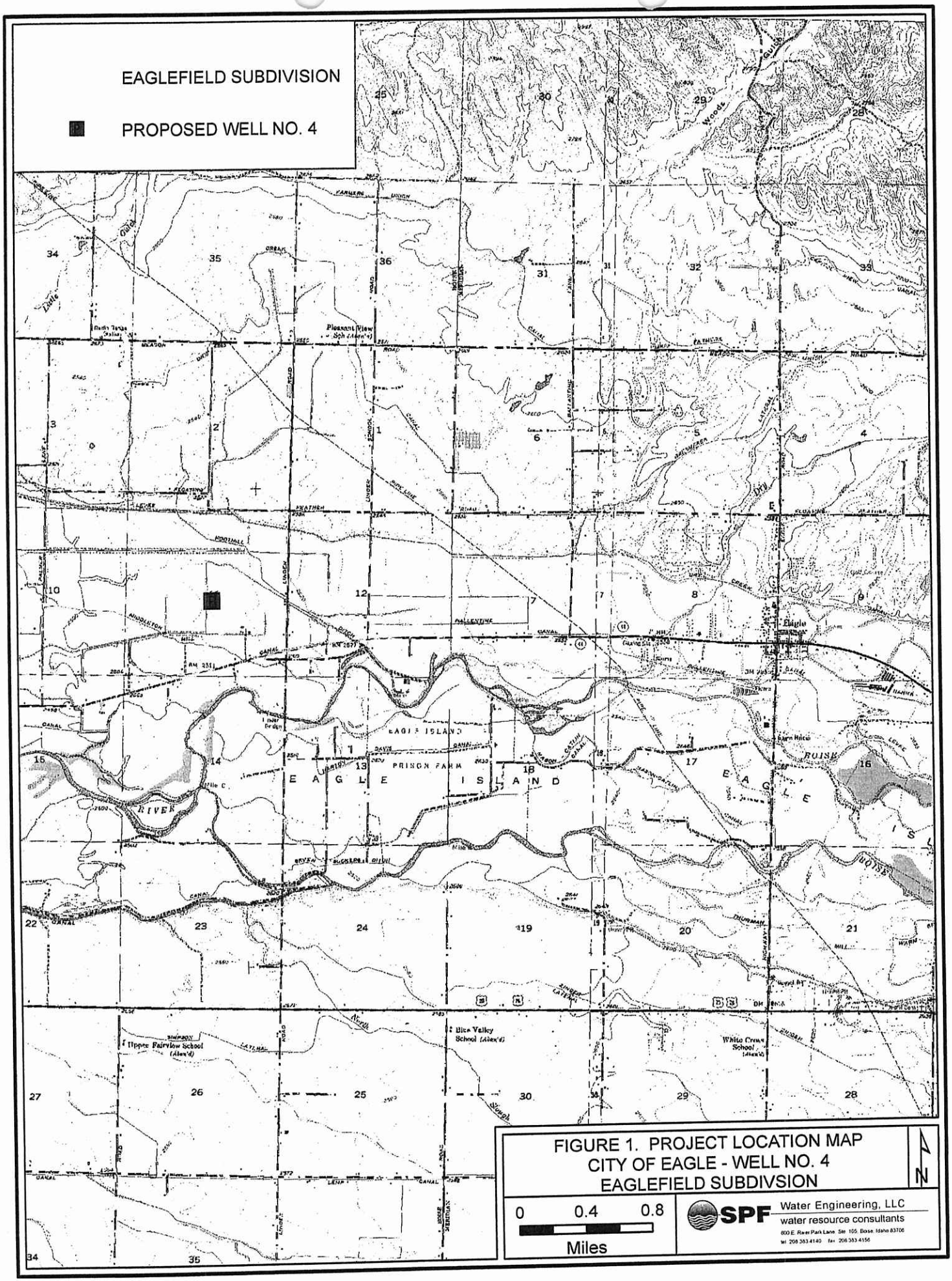
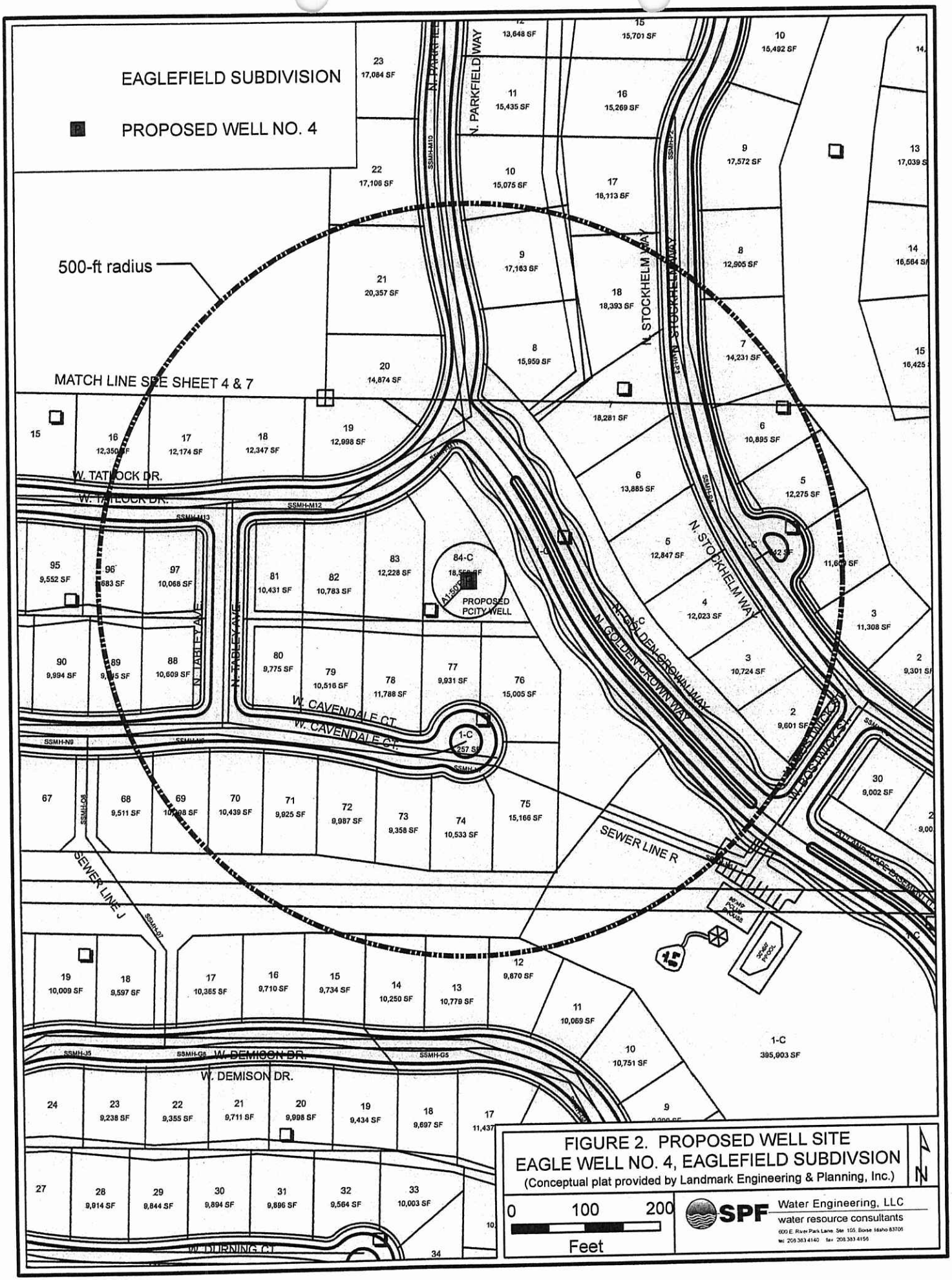
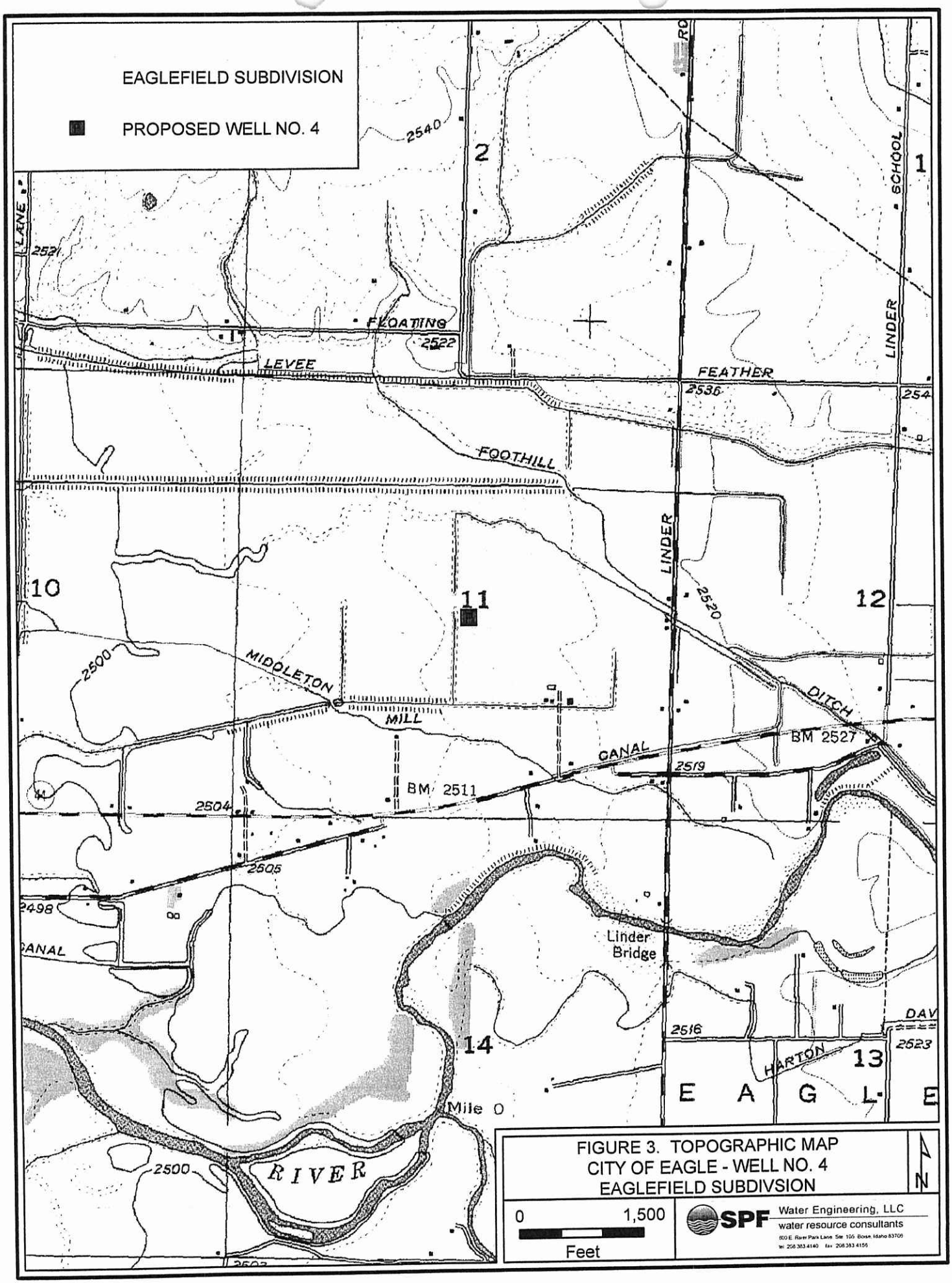


FIGURE 1. PROJECT LOCATION MAP
CITY OF EAGLE - WELL NO. 4
EAGLEFIELD SUBDIVSION

SPF Water Engineering, LLC
water resource consultants
800 E. River Park Lane Ste 105, Boise, Idaho 83706
tel 208.383.4140 fax 208.383.4156


EAGLEFIELD SUBDIVISION
PROPOSED WELL NO. 4
500-ft radius
MATCH LINE SEE SHEET 4 & 7
PROPOSED PCITY WELL
W. TATLOCK DR.
W. CAVENDALE CT.
W. DEMISON DR.
W. DURNING CT.
N. PARKFIELD WAY
N. STOCKHELM WAY
N. GOLDEN CROWN WAY
N. TABLEY AVE.
SEWER LINE R
SEWER LINE J
FIGURE 2. PROPOSED WELL SITE
EAGLE WELL NO. 4, EAGLEFIELD SUBDIVSION
(Conceptual plat provided by Landmark Engineering & Planning, Inc.)
0 100 200
Feet
SPF Water Engineering, LLC
water resource consultants
600 E. River Park Lane Ste 105, Boise Idaho 83706
tel: 208.383.4140 fax: 208.383.4156


EAGLEFIELD SUBDIVISION
PROPOSED WELL NO. 4
2540
2521
LANE
FLOATING
2522
LEVEE
FEATHER
2536
254
LINDER
SCHOOL
FOOTHILL
10
11
12
2520
MIDDLETON
MILL
2500
DITCH
BM 2527
CANAL
2519
BM 2511
2504
2505
2498
CANAL
Linder
Bridge
14
13
2516
2523
HARTON
DAV
E A G L E
Mile 0
RIVER
2500
FIGURE 3. TOPOGRAPHIC MAP
CITY OF EAGLE - WELL NO. 4
EAGLEFIELD SUBDIVSION
N
0
1,500
Feet
SPF Water Engineering, LLC
water resource consultants

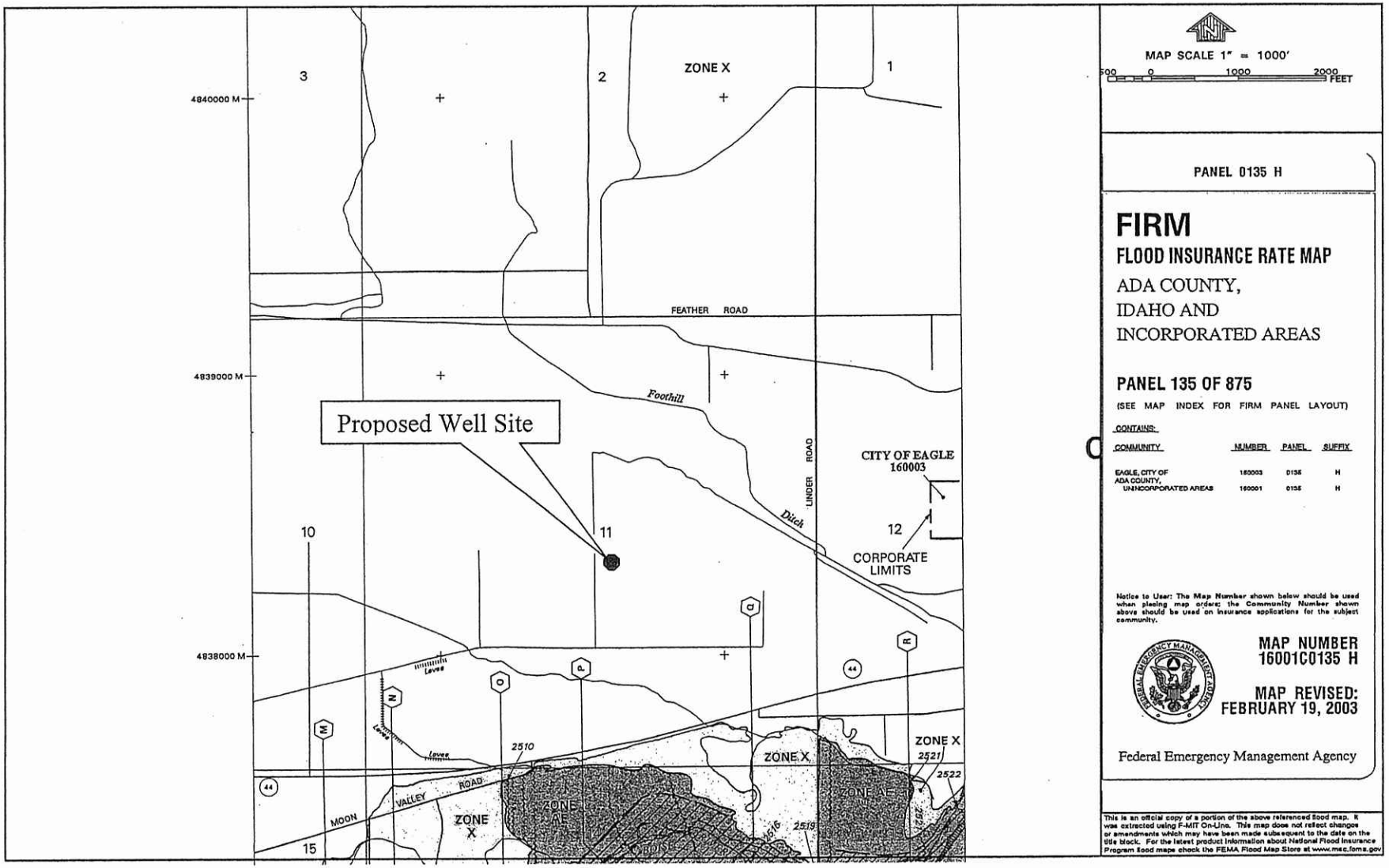
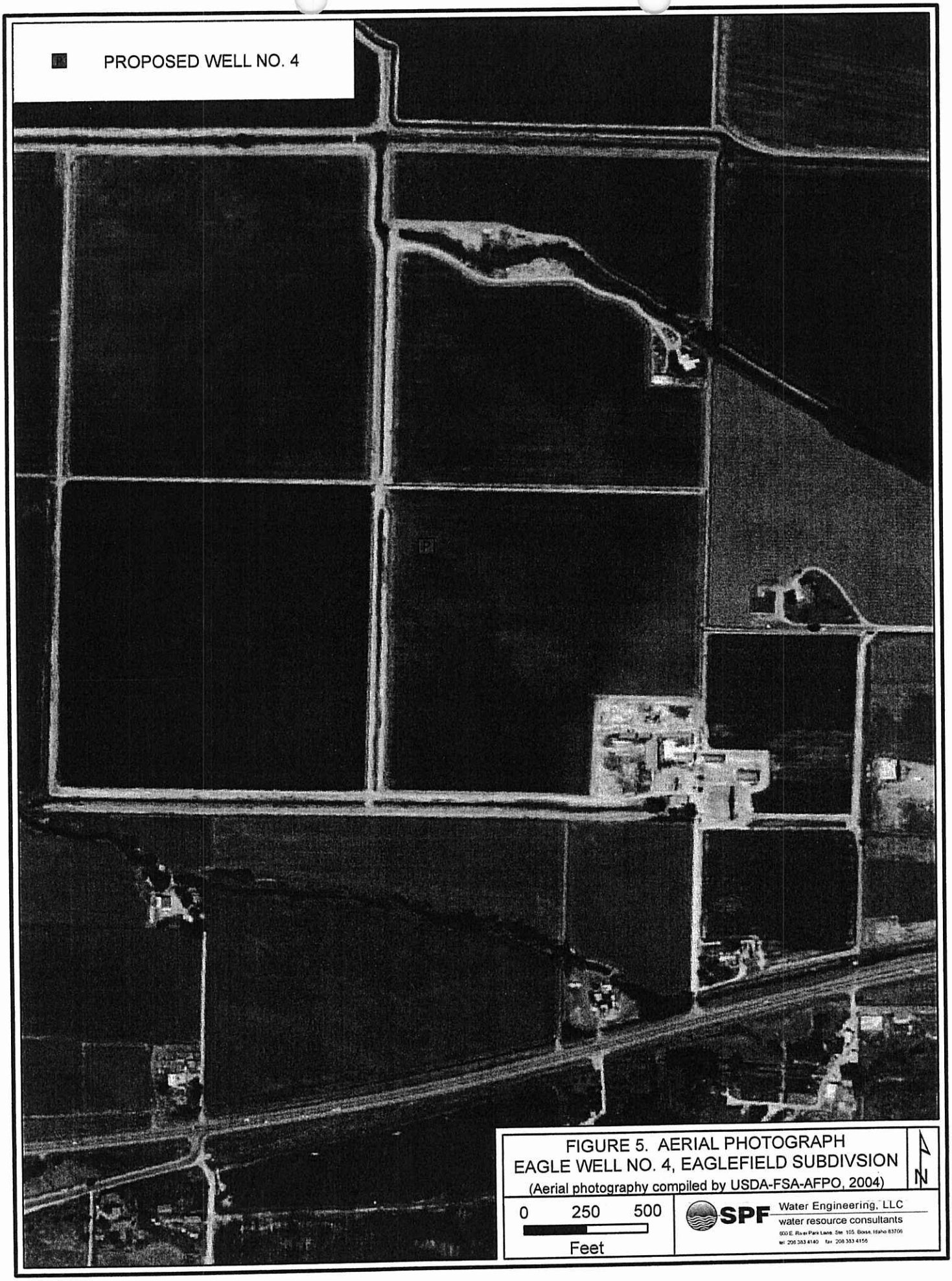
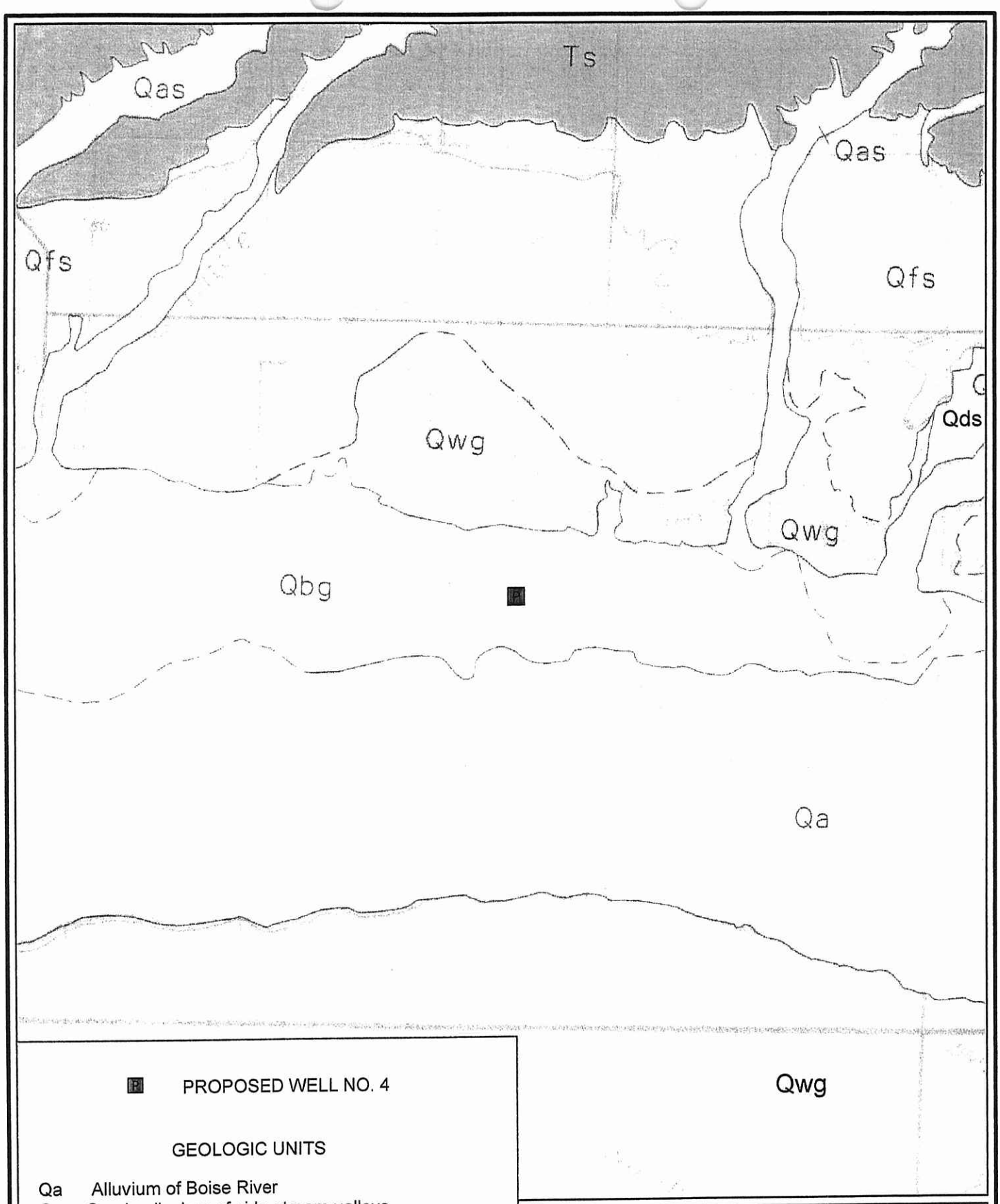


Figure 4. Portion of Ada County flood hazard map showing location of proposed Well No. 4.


PROPOSED WELL NO. 4
FIGURE 5. AERIAL PHOTOGRAPH
EAGLE WELL NO. 4, EAGLEFIELD SUBDIVSION
(Aerial photography compiled by USDA-FSA-AFPO, 2004)
N
0 250 500
Feet
SPF Water Engineering, LLC
water resource consultants
600 E. River Park Lane, Ste. 105, Boise, Idaho 83706
tel: 208.383.4140 fax: 208.383.4156



PROPOSED WELL NO. 4

GEOLOGIC UNITS

Qa Alluvium of Boise River
Qas Sandy alluvium of side-stream valleys
Qfs Sand of incised alluvial fans
Qds Sand of Dry Creek Terrace
Qbg Gravel of Boise Terrace
Qwg Gravel of Whitney Terrace
Ts Sand and mudstone of stream and lake sediments

FIGURE 6. SURFICIAL GEOLOGY
EAGLE WELL NO. 4, EAGLEFIELD SUBDIVSION
(Geologic map from Othberg and Stanford, 1992)

N

0 2,000 4,000
Feet

SPF Water Engineering, LLC
water resource consultants
600 E. River Park Lane Ste 105, Boise, Idaho 83706
tel 208 383 4140 fax 208 383 4156

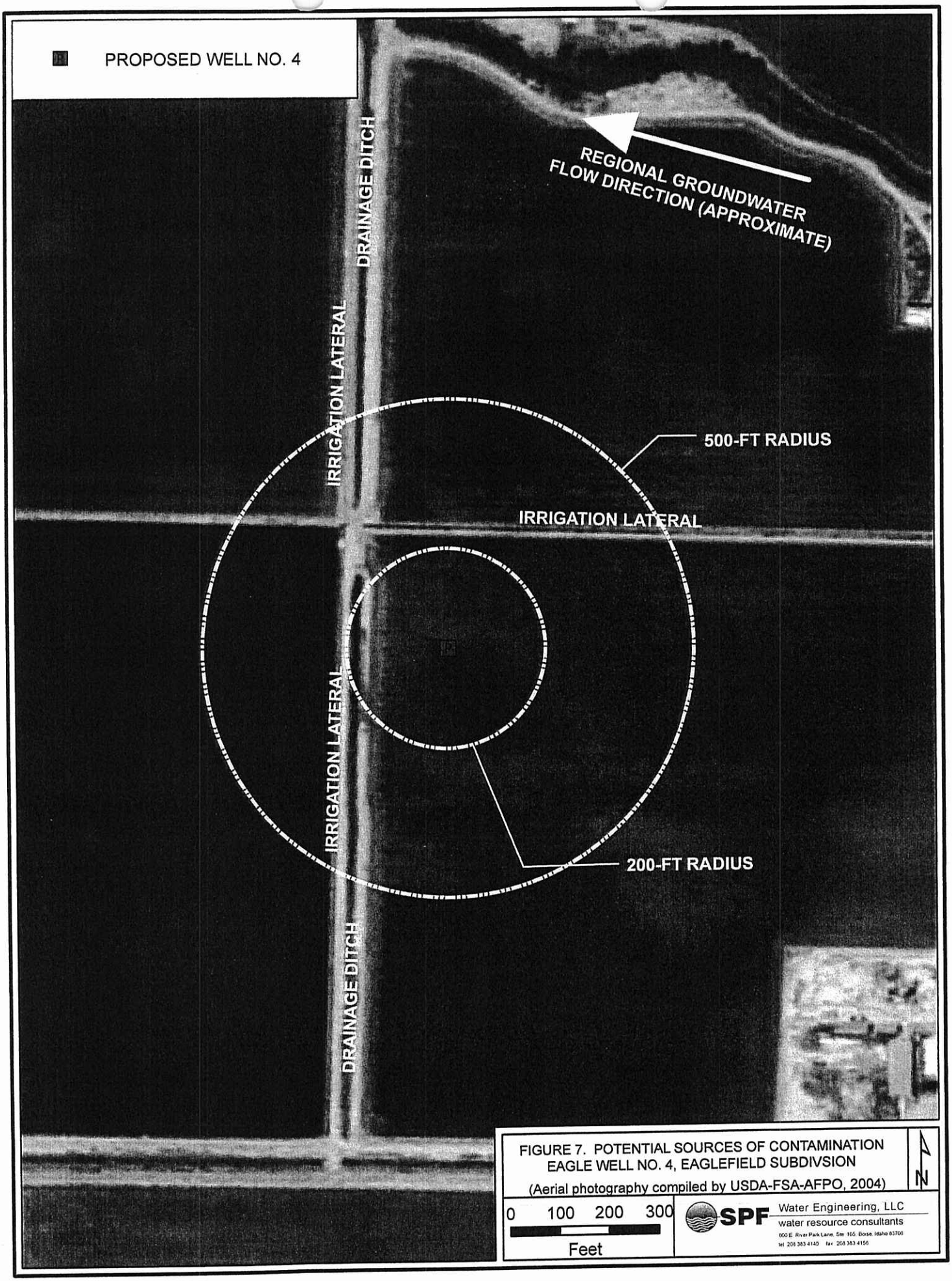
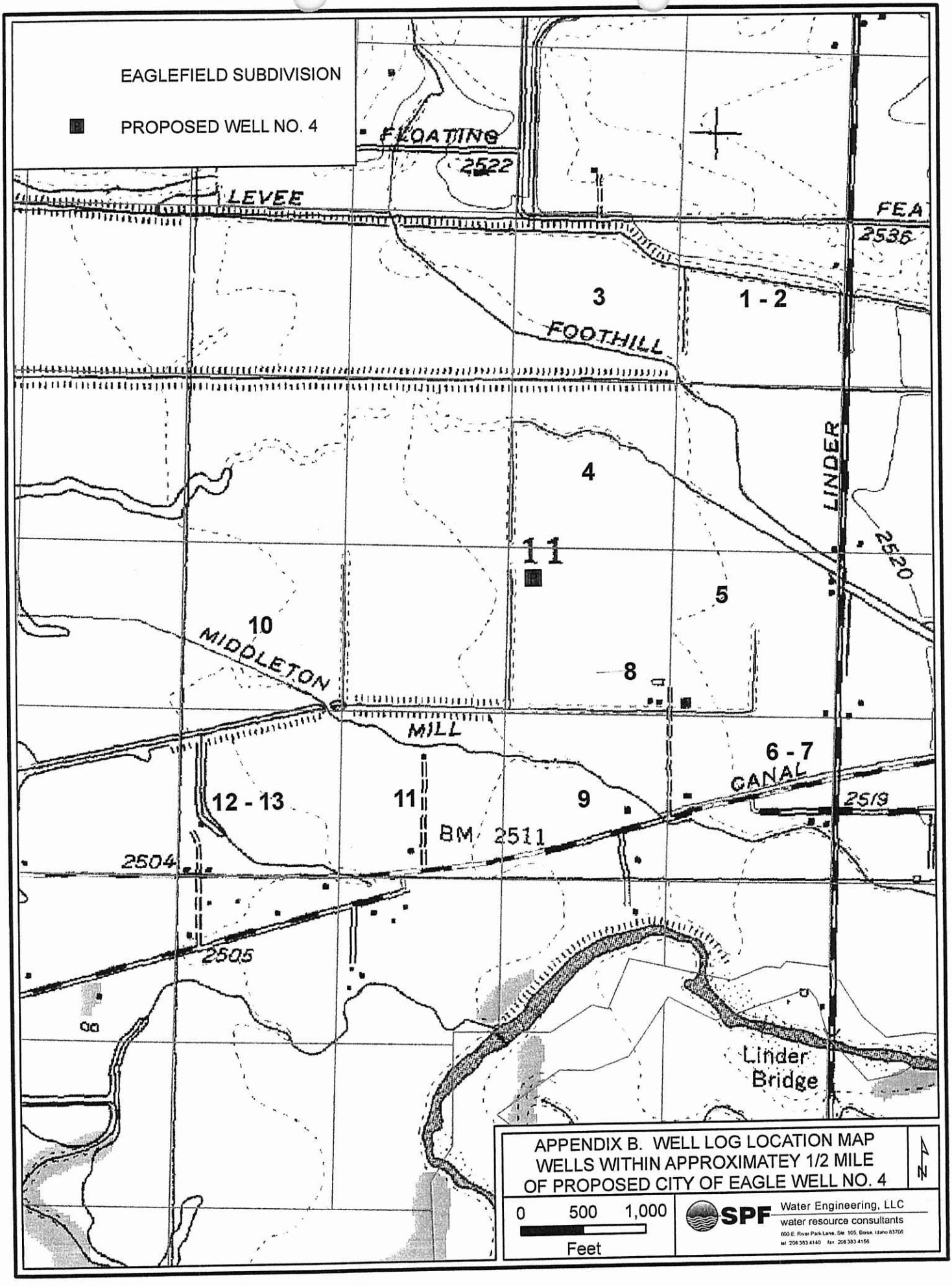


FIGURE 7. POTENTIAL SOURCES OF CONTAMINATION
EAGLE WELL NO. 4, EAGLEFIELD SUBDIVSION
(Aerial photography compiled by USDA-FSA-AFPO, 2004)

APPENDIX B

WELL DRILLERS' LOGS


EAGLEFIELD SUBDIVISION
PROPOSED WELL NO. 4
FLOATING
2522
LEVEE
FEA
2536
3
1 - 2
FOOTHILL
LINDER
4
11
2520
5
10
MIDDLETON
8
MILL
6 - 7
CANAL
12 - 13
11
9
2519
BM 2511
2504
2505
Linder
Bridge
APPENDIX B. WELL LOG LOCATION MAP
WELLS WITHIN APPROXIMATEY 1/2 MILE
OF PROPOSED CITY OF EAGLE WELL NO. 4
0
500
1,000
Feet
SPF
Water Engineering, LLC
water resource consultants
650 E. River Park Lane, Ste. 105, Boise, Idaho 83706
tel: 208.383.4140 fax: 208.383.4156

Appendix B. IDWR records of driller's reports for wells located within approximately 1/2 mile of proposed City of Eage Well No. 4, Eaglefield Subdivision

WELL NO	OWNER	TOWNSHIP	RANGE	SEC	QQ	Q	WELL ADDRESS	NATURE OF USE	PRODUCTION (GPM)	STATIC WATER LEVEL (FEET BELOW GROUND)	CASING DIAMETER (INCHES)	SCREEN DIAMETER (INCHES)	CASING DEPTH (FEET)	TOTAL DEPTH (FEET)	CONSTRUCTION DATE
1	EARL O WOLFE	04N	01W	11	NE	NE		Irrigation	250	<0	6	---	169	172	Oct 18 1961
2	QUARTER CIRCLE D J RANCH	04N	01W	11	NE	NE		Irrigation	1500	-2	16	10	410	420	Dec 30 1969
3	QUARTER CIRCLE DJ RANCH CO	04N	01W	11	NW	NE	5211 FLOATING FEATHER RD	Domestic-Single Residence	100	-1.5	6	5	102	107	Sep 29 2001
4	CARYL HARRIS	04N	01W	11	SW	NE		Domestic	350	-18	6	---	201	220	Apr 8 1976
5	HOLLY HOFFBERG	04N	01W	11	NE	SE	685 N LINDER	Domestic-Single Residence	60	5	6	5	84	84	Nov 16 1990
6	HOPE LUTHERAN CHURCH & UNITED WATER IDAHO	04N	01W	11	NE	SE	STATE ST & LINDER RD - HOPE LUTHERAN CHURCH	Exploration		-14.5	2	2	500	845	Oct 13 1997
7	HOPE LUTHERAN CHURCH & UNITED WATER IDAHO	04N	01W	11	NE	SE	STATE ST & LINDER RD - HOPE LUTHERAN CHURCH	Exploration		-14.5	2	2	920	980	Dec 24 1997
8	CONRAD E HAWKINS	04N	01W	11	NW	SE		Domestic	325	3	6	---	42	44	Jul 21 1954
9	WILLIAM BROOKS	04N	01W	11	SW	SE		Domestic	20	-12	6	---	143	150	May 7 1976
10	SCOTT RAYMES	04N	01W	11	NW	SW		Domestic	30	-10	6	6	94	95	May 6 1986
11	MARION MOORE	04N	01W	11	SE	SW		Irrigation	20	<0	8	---	132	134	Feb 11 1974
12	BERNIE LACEY	04N	01W	11	SW	SW		Domestic	12	10	6	5	81	81	Apr 12 1985
13	BORUP CONSTRUCTION	04N	01W	11	SW	SW		Domestic	30	3	6	5	54	56	Jun 10 1987

These records were downloaded from the IDWR GIS database on December 28, 2005.

3034

RECEIVED
OCT 25 1961
Department of Reclamation

WELL LOG AND REPORT OF THE STATE RECLAMATION ENGINEER OF IDAHO

Permit No. _____ Well No. _____ County ADA

36477

Owner Mr. Earl Wolfe

Address 1404 Ada, Boise

Driller Bill McClish

Address 6810 Holiday Dr. Boise

Well location NE ¼ NE ¼ Sec. 11, T. 4 N/S, R. 1 E/W

Size of drilled hole 6"

Total depth of well 172'

Locate well in section

NW¼	NE¼
SW¼	SE¼

Give depth to standing water from the ground _____ Water temp. _____ °Fahr.

On "Pumping Test" delivery was _____ g.p.m. or _____ c.f.s. Drawdown was _____ feet.

Size of pump and motor used to make test _____

Length of time of test 6 hours _____ minutes.

If flowing well, give flow _____ c.f.s. or 250 g.p.m. and of shut-off pressure _____

If flowing well, described control works NONE (TYPE AND SIZE OF VALVE, ETC.)

Water will be used for Irrigation Weight of casing per lineal foot 28 lbs

Thickness of casing ⅜ Casing material Steel (STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing 6" 169' (CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER; CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
6"	0'	169'	169'	Grouted in Yellow Clay

Number and size of perforations _____ located _____ feet to _____ feet from ground

_____ _____ _____

_____ _____ _____

Date of commencement of well 10/2/61 Date of completion of well 10/18/61

NENE S.11 T.4N R.1W

WELL LOG

From Feet	To Feet	Type of Material	Water-bearing Formation Ans. Yes or No	Casing Perforated Ans. Yes or No
0	5	Top Soil	No	
5	25	Sand & Gravel Mixed	No	
25	65	Blue Shale	No	
65	70	Sand	Yes	
70	95	Sand & Clay Chunks	Yes	
95	105	Sandy Yellow Clay	No	
105	107	Sand	Yes	
107	138	Sandy Yellow Clay	No	
138	155	Sand	Yes	
155	165	Sandy Yellow Clay	No	
165	170	Yellow Clay	No	
170	172	Sand	Yes	
		If more space is required use Sheet No. 2		

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is true and correct to the best of my knowledge and belief.

Signed Bill McClish

By Kenneth Witt

License No. 55

Dated 10/23/61, 19

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
artment of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

RECEIVED

Department of Reclamation

3040

2

1. WELL OWNER Mathers Place

Name Quarter Circle D.J. Ranch

Address Star, Idaho

Owner's Permit No. 63-7278

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 16 inches Total depth 420 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
¼ inches	16 O.D inches	0+2 feet	311 feet
¼ inches	10 O.D inches	216 feet	420 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☒ Factory ☐ Knife ☐ Torch

Size of perforation 3/16 inches by 3 inches

Number		From	To
2400	perforations	310 feet	410 feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☒ Yes ☐ No Size of gravel 5/16"

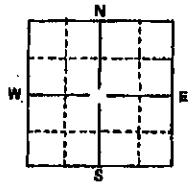
Placed from 216 feet to 420 feet

Surface seal? ☒ Yes ☐ No To what depth 28 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



63

County

NE ¼ SE ¼ Sec. 11 T. 4 N. R. 1 W

Sec. 2

7. WATER LEVEL

Static water level feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow 100

Temperature 60 ° F. Quality Good

Artesian closed-in pressure 1 p.s.i.

Controlled by ☒ Valve & ☒ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Other Compressor

Discharge G.P.M.	Draw Down	Hours Pumped
1500	50ft.	8

32133

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
16	0	8	Top soil		*
	8	30	Gravel, sand, clay	*	
	30	110	Clay, sand	*	
	110	140	Fine sand	*	
	140	190	Clay, small layers sand	*	
	190	220	Light brown clay		*
	220	270	Brown clay, some fine sand	*	
	270	305	Fine brown sand	*	
	305	320	Light brown clay		*
	320	420	Fine brown sand, small layers clay	*	
			10" right hand coupling on top of 10" liner		
			Gravel pack took 10yds. gravel		

10. Work started Nov. 24, 1969 finished Dec. 30, 1969

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

D.E. Stevens & Sons 153
Driller's or Firm's Name Number

3709 Hawthorne Boise
Address

Wayne E Stevens Dec. 31, 1969
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

V.H.

771376

3

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0019207
DRILLING PERMIT NO. ____-____-____-____-____
Other IDWR No. _____

2. OWNER:
Name Quarter Circle DJ Ranch
Address P.O. Box 279
City Eagle State ID Zip 83616

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S — X

Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11, ____ 1/4 (10 acres) NW 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 5211 Floating Feather Rd.
City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	20	600LB	Overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 97 ft
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	97	.15	Steel	☒	☐	☒	☐
5"	92	102	.25	Steel	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe 10 ft Length of Tailpipe –

9. PERFORATIONS/SCREENS
Perforations Method _____
Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
102	107	.020	–	5"	Stainless	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
+1.5 ft. Above/below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
100GPM	–	100 Ft	45 MIN

Water Temp. 56° Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter 12 ft

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	0	2	Top Soil		X
"	2	6	Brown Clay		X
"	6	8	Tan Clay		X
"	8	18	Gravel	X	
"	18	20	Tan Clay		X
"	20	26	Tan Clay		X
"	26	70	Blue Clay		X
"	70	72	Sand	X	
"	72	78	Tan Clay		X
"	78	85	Sand	X	
"	85	92	Tan Clay		X
"	92	94	Sand	X	
"	94	97	Tan Clay		X
"	97	107	Sand	X	

RECEIVED
OCT 16 2001
Dept of Water Resources

RECEIVED
OCT 05 2001
WATER RESOURCES
WESTERN REGION

Completed Depth 107 ft (Measurable)
Date: Started 9-29-01 Completed 9-29-01

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Coonse Well Drilling Firm No. 409
Firm Official George E Coonse Date 10-1-01
and
Driller or Operator Andy Clark Date 10-1-01
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

4

1. WELL OWNER

Name Caryl Harris

Address Canada Rd Star Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 220 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250. inches	6 inches	+02 feet	201 feet
250. inches	8 inches	0 feet	26 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

250. Steel Ring Welded Between 6 & 8"

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☐ No Size of gravel _____

Placed from _____ feet to _____ feet

Surface seal depth 26' Material used in seal ☐ Cement grout

Native Bentonite ☒ Puddling clay ☐ Well cuttings

Sealing procedure used ☒ Slurry pit ☐ Temporary surface casing

26' — 8" Surface Dia. ☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

63

N / W / E / S

Subdivision Name _____

Lot No. _____ Block No. _____

County Ada

SW¼ NE¼ Sec. 11, T. 4 N R. 1 E/W

7. WATER LEVEL

Static water level _____ feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow Approx. 350

Temperature _____ ° F. Quality good

Artesian closed-in pressure 8 p.s.i.

Controlled by ☒ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

40076

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	26'			
6	0	3	Topsoil		
	3	4	Hard Pan		
	4	8	Sandy Clay		
	8	20	Gravel & Sand	X	
	20	35	Brn. Clay		
	35	46	Tan Clay		
	46	57	Fine Sand	X	
	57	72	Light Clay		
	72	75	Tough Brn Clay		
	75	83	Sand	X	
	83	84	Blue Clay		
	84	97	Med Brn. Sand	X	
	97	122	Clay		
	122	130	Fine Sand	X	
	130	135	Clay		
	135	136	Sand	X	
	136	148	Sandy Clay		
	148	153	Soft Sloppy Clay		
	153	162	Firm Tan Clay		
	162	170	Sand	X	
	170	176	Clay		
	176	184	Sand Med	X	
	184	186	Clay		
	186	197	Sand	X	
	197	207	Clay - Sand Lenses		
	207	220	Tough Clay		
	220		Sandy Clay		
			Artesian Sand Coarse Brn		

10. Work started 3-16-76 finished 4-8-76

11. DRILLERS CERTIFICATION

Firm Name Jack Simmons Firm No. 221

Address 6355 W Chinden Meridian Date _____

Signed by (Firm Official) _____

or Jack Simmons (Operator)

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
8/90

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALL POINT PEN

5

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

0721.52

1. WELL OWNER
Name Nemec Construction (Holly Hoffberg)
Address 685 N. Linder, Meridian 83642
Drilling Permit No. 63-90-2-226
Water Right Permit No. _____

2. NATURE OF WORK
☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE
☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED
☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	0 feet	59 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No at 59'
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Housetop
Type Stainless Steel Model No. _____
Diameter 5" Slot size .20 Set from 69 feet to 74 feet
Diameter 5" Slot size .25 Set from 74 feet to 84 feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 28' Material used in seal: ☐ Cement grout ☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL
Sketch map location must agree with written location.

N / W / E / S

Subdivision Name _____
Lot No. _____ Block No. _____
County Ada
SE ¼ SE ¼ Sec. 11, T. 4 ☐ N ☒ S, R. 1 ☐ E ☒ W

7. WATER LEVEL
Static water level 5' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA
☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
60	10'	2½

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9"	0	2	Top Soil		☒
9"	2	38	Sand & gravel	☒	
6"	38	40	Sand &		☒
6"	40	45	Brown Clay		☒
6"	45	54	Sand	☒	☒
6"	54	58	Brown clay		☒
6"	58	84	White Sand & gravel	☒	

RECEIVED
MAR 18 1991
Department of Water Resources

RECEIVED
MAR 13 1991
Department of Water Resources
Western Regional Office

10. Work started 11/06/90 finished 11/16/90

11. DRILLERS CERTIFICATION see
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Firm Name S.O.S Welding Inc. Firm No. 212
4445 N. Black Cat Rd
Address Meridian, Id Date 11/17/90
Signed by (Firm Official) _____
and
(Operator) _____

EXAMINED
MAR 19 1992

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

RECEIVED
Form 238-7
3/95
OCT 28 1997
Department of Water Resources

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

6

1. DRILLING PERMIT NO. 63-97-W-0633-801
Other IDWR No. _____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11, N/E 10 acres 1/4 S/E 40 acres 1/4 ____ 160 acres 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St & Linder
(Hope Luth Church) City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☐ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test well

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD

Was drive shoe used? ☐Y ☐N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ft. below ground Artesian pressure 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air XX Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			~~see drawing for pipe information~~		

RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION
MICROFILMED
JAN 09 1998

Completed Depth 845 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

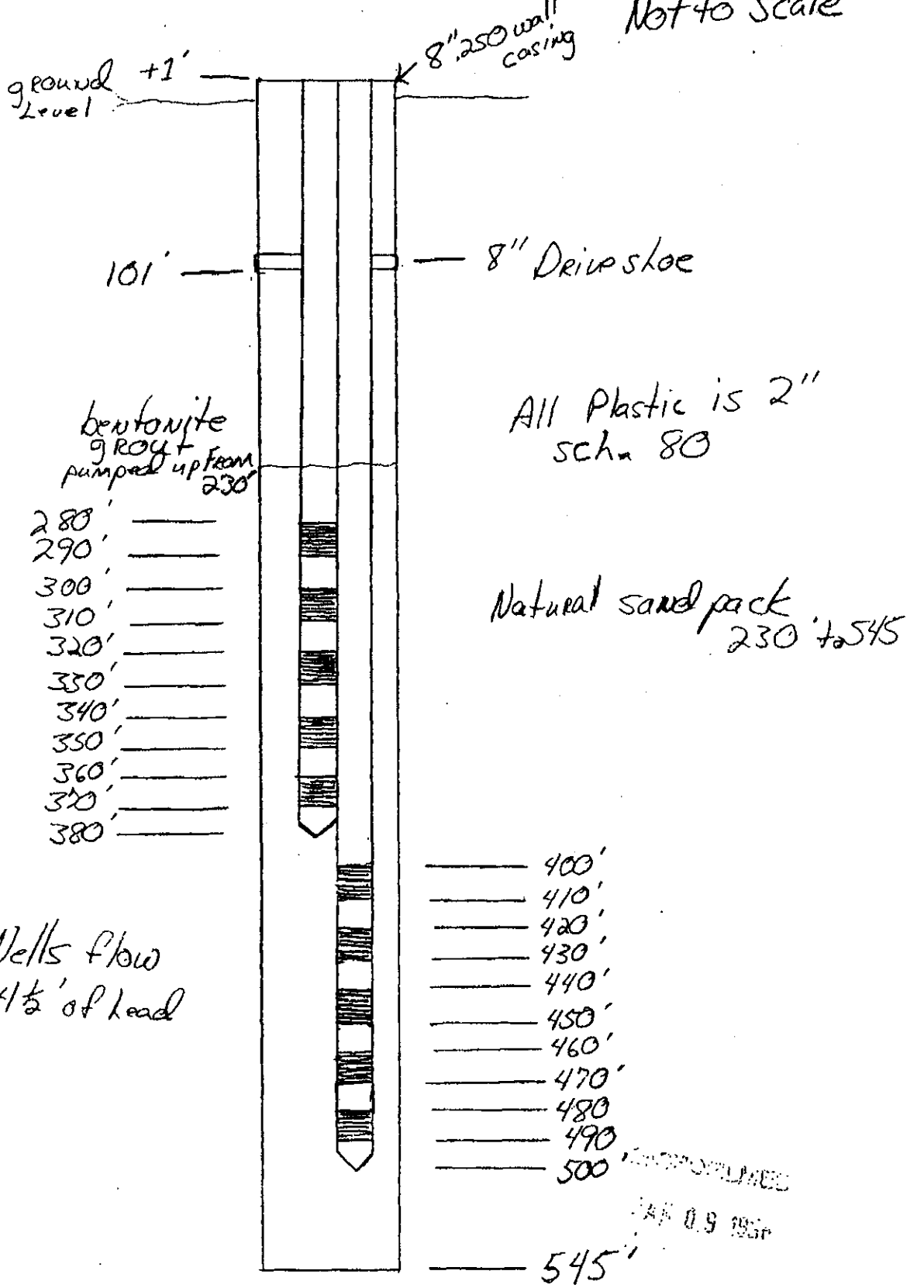
13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official _____ Date _____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Unit 7 Water State & Lind 63-97-W-0633-801 6
test Well #1 67931

Not to scale



Both Wells flow under 14½' of head

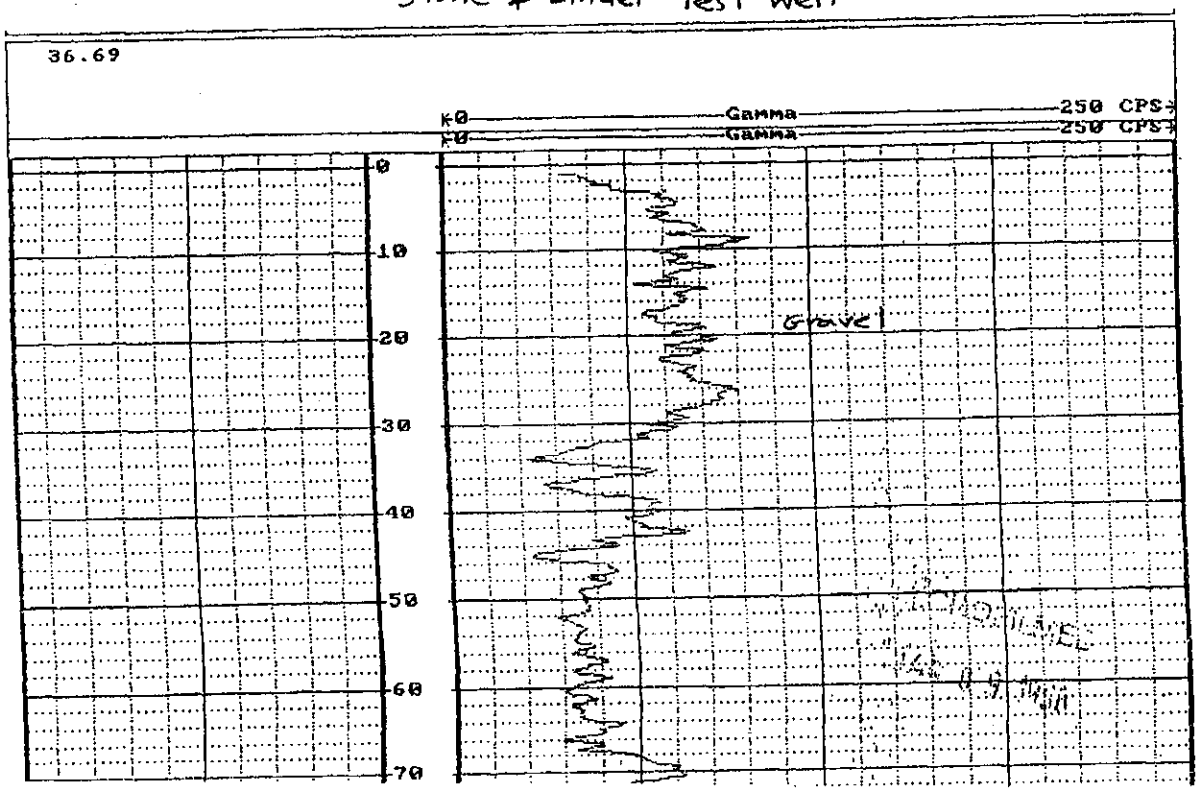
63-97-W-0633-801

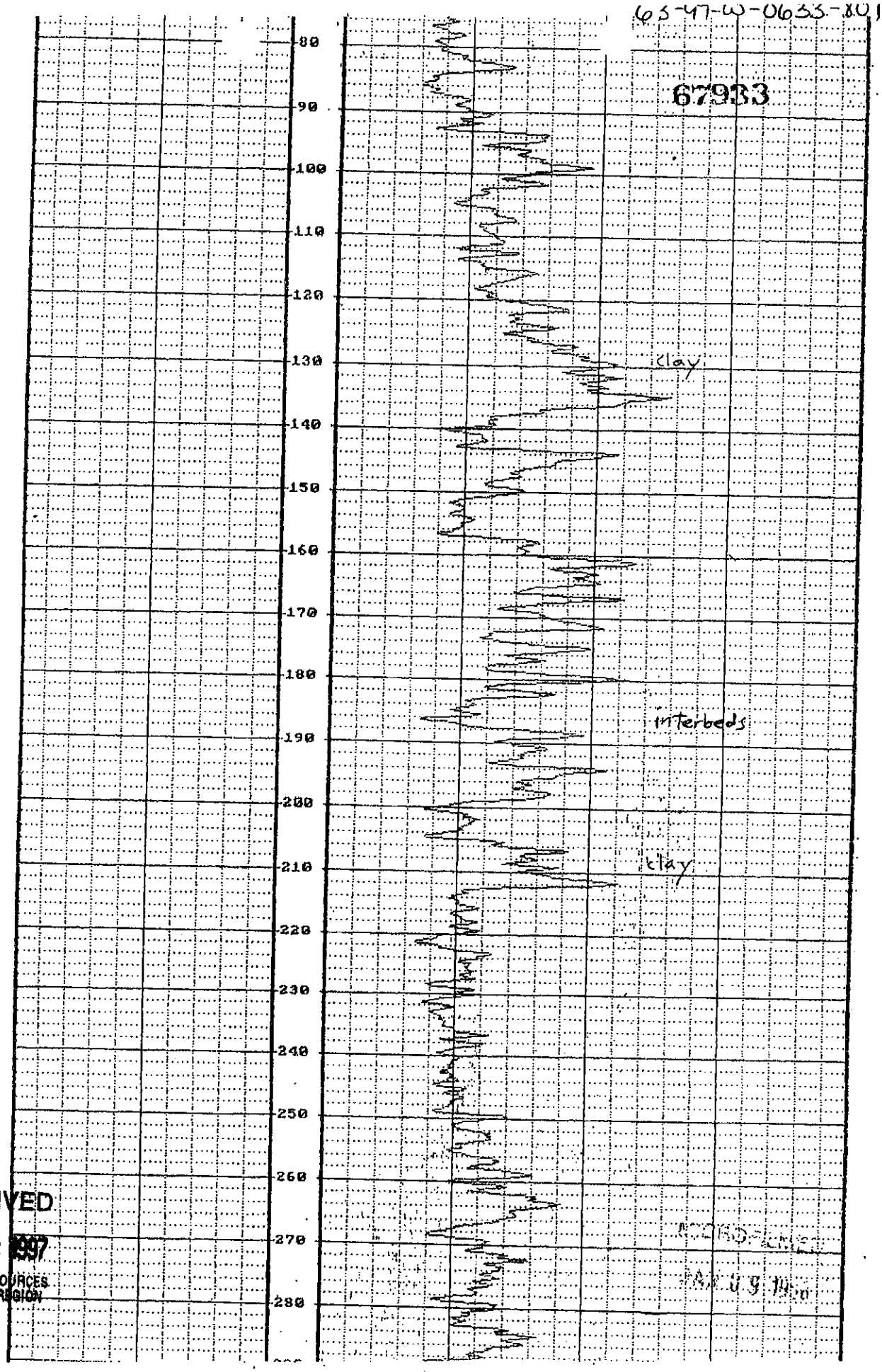
6

67932

RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

State # Linder Test Well

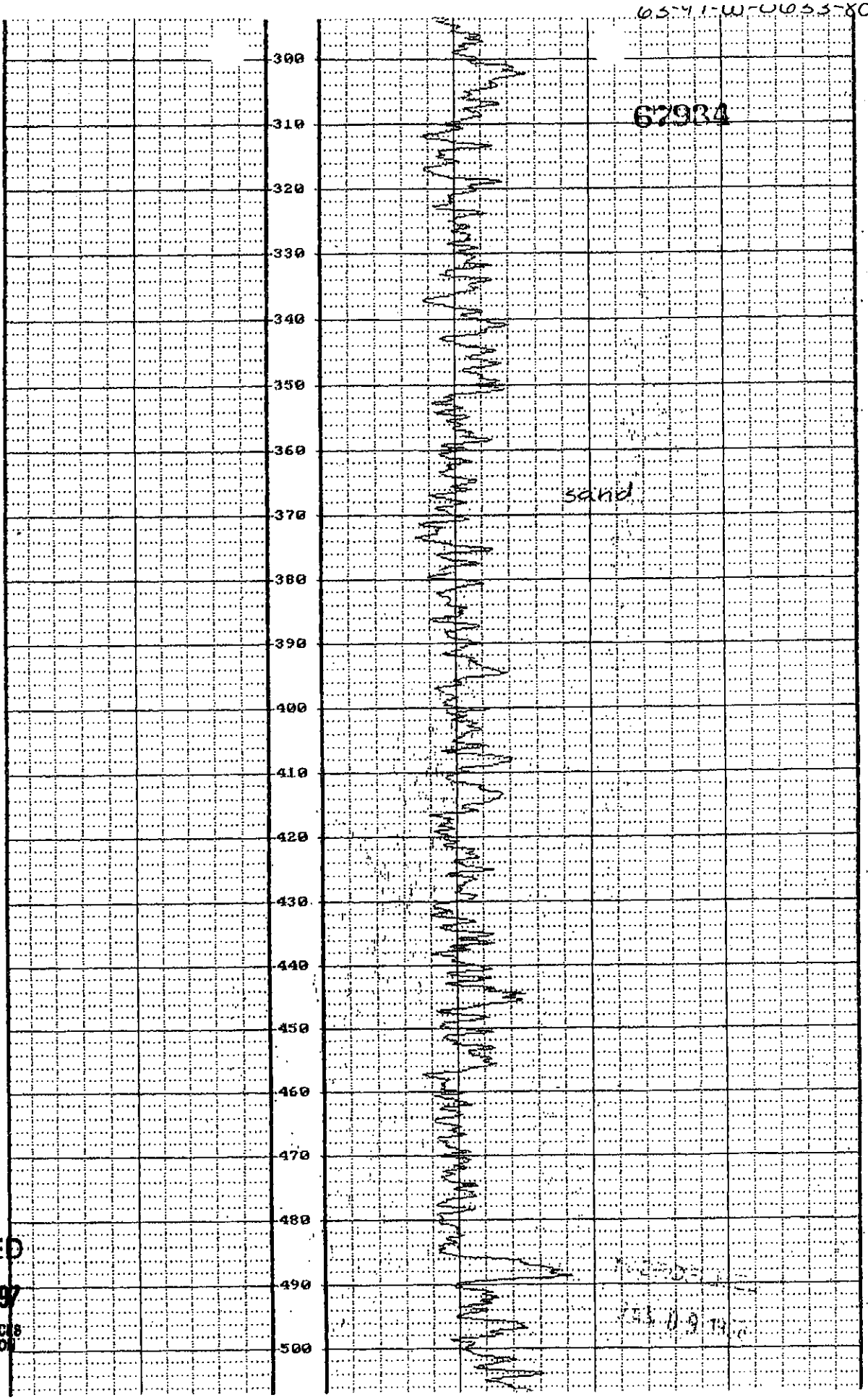


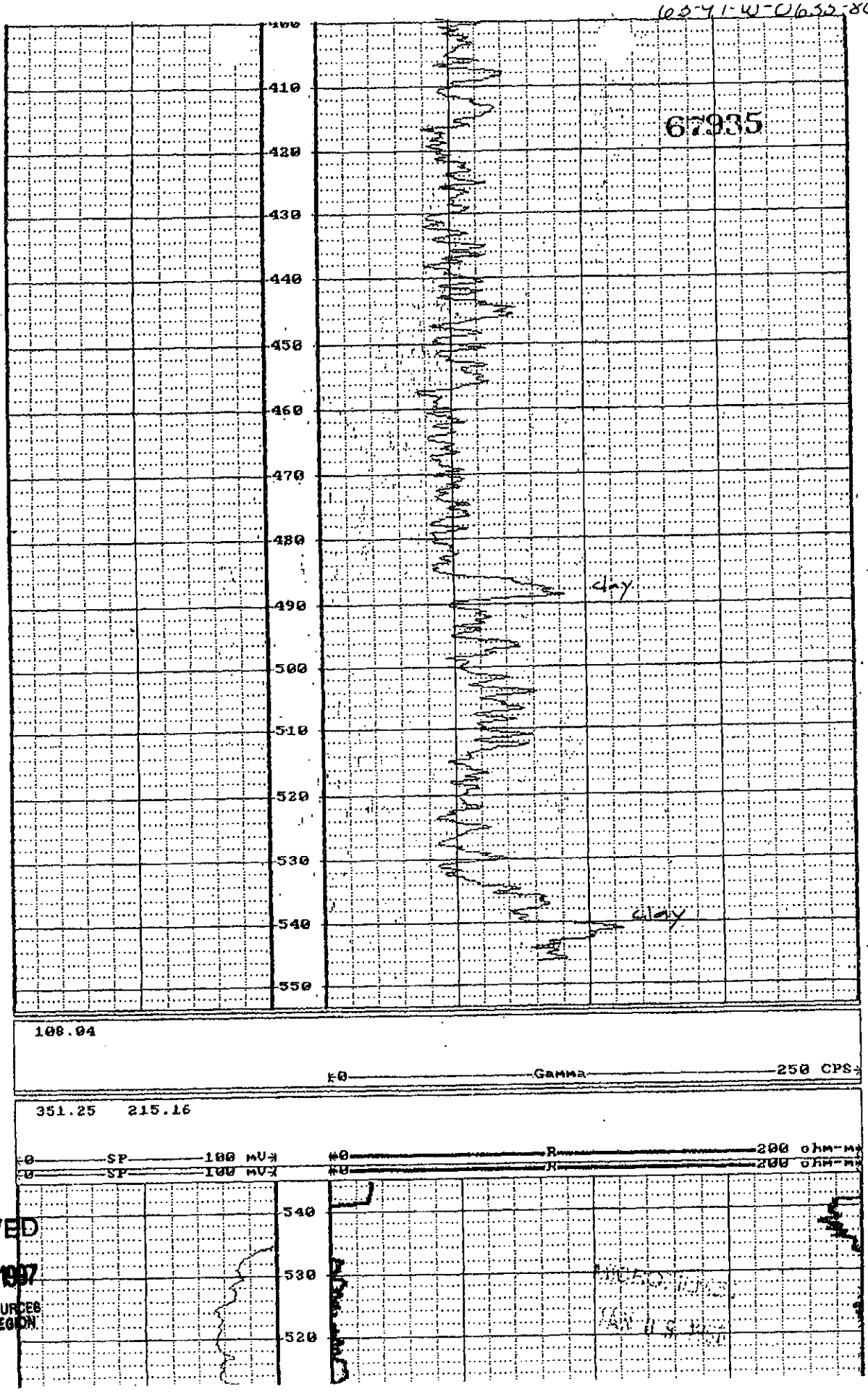


63-41-W-0653-501

6

67934





Pg 1 of 2

7

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT 060894

Use Typewriter or Ballpoint Pen

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0745-801
Other IDWR No. tag # D0001494

2. OWNER:
Name United Water Corp.
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 4 North XX or South ☐
Rge. 1 East ☐ or West XX
Sec. 11, N/E (10 acres) 1/4 S/E (40 acres) 1/4 ____ (160 acres) 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St at Linder (Hope Luth Church) City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Irish Acres

well #2

4. USE:
☐ Domestic ☐ Municipal XX Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bent Grt.	0	569		Pumped
"	730	880		"

Was drive shoe used? X Y ☐ N Shoe Depth(s) ____
Was drive shoe seal tested? X Y ☐ N How? Bailed

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+1	94	.250	Steel	X	☐	☐	☐
5"	+0	569	.258	"	☐	☐	☐	☐
2"	+1	920		PVC	☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____

MICROFILMED
JUN 2 5 1998

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
X Screens Screen Type PVC

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
920	950	20		2"	PVC	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air XX Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered ____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	548	blue clay	X	
	548	695	"interbedded" blue & brown sand & clay		X
	695	920	blue clay	X	
	920	950	blue sand		X
	950	980	blue clay		
			see drawing for pipe information		

RECEIVED
APR 07 1998
Department of Water Resources

RECEIVED
MAR 30 1998
WATER RESOURCES
WESTERN REGION

Completed Depth 980 (Measurable)
Date: Started 12/8/97 Completed 12/24/97

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

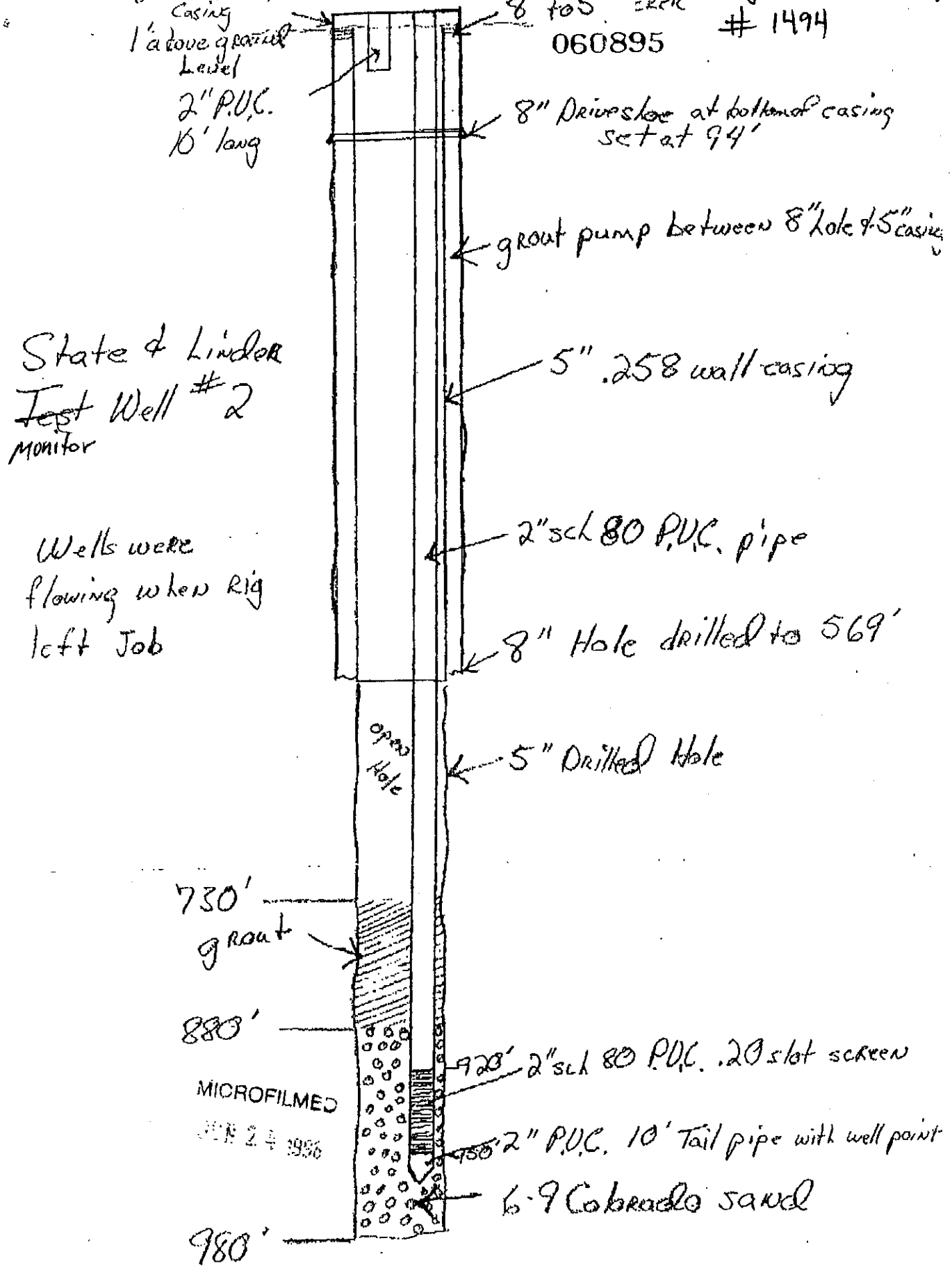
Firm Name Stevens & Sons Firm No. 153
Firm Official Ron Stevens Date 12/28/97
and
Supervisor or Operator ____ Date ____
(Signature of Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

D 1494

Page 2 of 2 7

1494



8

WELL LOG AND REPORT TO THE STATE RECLAMATION ENGINEER OF IDAHO

034720

Log No. RECEIVED
Rec. APR 5 1955
Well No. Department of Reclamation
Permit No. 72552

(DO NOT FILL IN)

Owner Conrad C. Hawkins Address R. 1 Eagle, Idaho,

Driller Jake Dix, Address Boise, Idaho, Lic. No. 31

Location of Well: NW ¼ SE ¼ Sec. 11, T. 4 N/S, R 1 E/W Ada, County,

and ____ feet N/S, and ____ feet E/W from ____ Corner of ____ ¼ ____ ¼ Sec. ____

Size of Drilled Hole 8" Total depth of Well 44 ft.

Give depth of standing water from surface 3 ft. Water Temp. ____ °Farenheit

On pumping test delivery was 325 g.p.m. or ____ c.f.s. Drawdown was 20 feet.

Size of pump and motor used to make the test Air Compressor.

Length of time pumped during check was 8 hrs hr., ____ minutes.

If flowing well, give flow in c.f.s. ____ or g.p.m. ____ and shut in pressure ____

If flowing well, describe control works ____ (TYPE AND SIZE OF VALVE, ETC.)

Water will be used for Irrigation Weight of casing per linear foot 24.7

Thickness of casing Standard Steel Casing material Coupled & Threaded E.G., PIPE, CONCRETE, WOOD.

Diameter, length and location of casing 42' 6" (CASING 12" IN DIAMETER AND UNDER GIVE INSIDE DIAMETER; CASING OVER 12" IN DIAMETER GIVE OUTSIDE DIAMETER.)

Number and size of perforations ____ located ____ feet to ____ feet from surface of ground.

Other perforations ____

Date of commencement of well July, 16/54 Date of completion of well July, 21, 54

Type of well rig ____

CASING RECORD

DIAM. CASING	FROM FEET	TO FEET	LENGTH	"REMARKS" -- SEALS, GROUTING, ETC.
755				

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

Located 3 miles west of Eagle on Highway 44,

NW SE S.11 4N 1W

WELL LOG

From Feet	To Feet	Type of Material	Drilling Time Hrs.	Drilling Time Min.	Water-bearing Formation Ans. Yes or No	Casing Perforated Ans. Yes or No
0	25	Sand and large gravel,	25 hr.		yes.	
25	40.	Sand and gravel.	16 hr.		yes.	
40	44	Yellow clay,	4 hr.		no.	
44	46	Sand & Gravel	2 hr.		yes.	
		Open end well.				
		Depth of well 44 ft.				
		If more space is required use Sheet No. 2				

WELL DRILLERS STATEMENT

This well was drilled under my jurisdiction and the above information is true and correct to the best of my knowledge and belief.

Signed Jack Dr.

By

License No. 31

Dated July 21, 1954

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

RECEIVED
JUL 8 1976
Department of Water Resources

9

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 20 days after the completion or abandonment of the well.

1. WELL OWNER

Name William Brooks
Address Route 1 Box 103 Eagle, Ida.
Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)
☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 150 feet
Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	143 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet

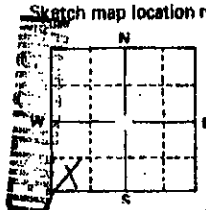
Gravel packed? ☐ Yes ☒ No Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 30' Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings
Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

(63)



Subdivision Name None
Lot No. None Block No. None
County Ada
SW ¼ SW ¼ Sec. 11 T. 4 N/S R. 1 E/W

7. WATER LEVEL

Static water level _____ feet below land surface
Flowing? ☒ Yes ☐ No G.P.M. flow 20
Temperature _____ ° F. Quality _____
Artesian closed-in pressure 50 p.s.i.
Controlled by ☒ Valve ☐ Cap ☒ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG 40075

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	2	Top Soil		X
	2	30	Gravel		X
	30	60	Sandy clay	X	
	60	100	Sand	X	
	100	105	Clay		X
	105	140	Sand	X	
	140	150	Clay		X
	150		Sand	X	

10. Work started 5-1-76 finished 5-7-76

11. DRILLERS CERTIFICATION

Firm Name Ted Hunsperger Well Drilling Firm No. 290
Address 573 White Cloud Dr. Boise, Ida. Date 5-7-76
Signed by (Firm Official) Ted Hunsperger
and
(Operator) Ted Hunsperger

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
9/82

STATE OF IDAHO
DEPART T OF WATER RESOURCES

USE TYPEWRITER OR
POINT PEN

10

WELL DRILLER'S REPORT

W

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Scott Baynes

Address 542 Longhorn Eagle, Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☒ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
2~~19~~ inches	6 inches	+ 2 feet	89 feet
.250 inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

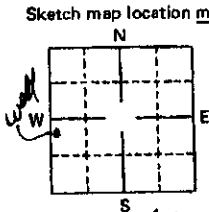
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Johnson
Type 304 S.S. Model No. Tele 304
Diameter 6 Slot size .25 Set from 89 feet to 94 feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 26 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing
☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port none

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Ada
NW ¼ SW ¼ Sec. 11, T. 4 N☒, R. 1 ☒W.

7. WATER LEVEL

Static water level plus 10 above land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30	6'4"	4

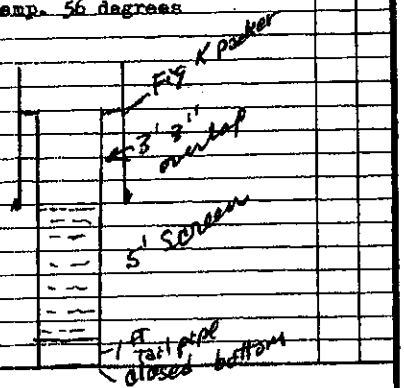
9. LITHOLOGIC LOG

88068

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6"	0	6'	Overburden		X
6"	6'	26'	Gravel	X	
6"	26'	46'	Clay yellow		X
6"	46'	49'	Clayed sand	X	
6"	49'	66'	Sand dirty & heaving	X	
6"	66'	75'	Clay yellow		X
6"	75'	77'	Sand	X	
6"	77'	78'	Clay	X	
6"	78'	81'	Sand	X	
6"	81'	87'	Clay yellow		X
6"	87'	95'	Sand well graded & clean	X	

RECEIVED
MAY 12 1986
Department of Water Resources
Western Regional Office

CA 4 grains
~~FE~~ none
PH 7
Temp. 56 degrees



10.
Work started 4-28-86 finished 5-6-86

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Aqua Masters Firm No. 130
Address 9170 Coleen Dr. Boise Date 5-7-86
Signed by (Firm Official) Kent P. Bunn
and
(Operator) Kent P. Bunn

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

Rec'd 11-4-74 DWR

11

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Marion Moore

Address Shady Acres

Owner's Permit No. 4 Mi W of Eagle Hwy 44

2. NATURE OF WORK

☐ New well ☒ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 134 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+2 feet	132 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☐ No ?

How perforated? ☐ Factory ☐ Knife ■ Torch

Size of perforation ____ inches by ____ inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type ____ Model No.

Diameter ____ Slot size ____ Set from ____ feet to ____ feet

Diameter ____ Slot size ____ Set from ____ feet to ____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel

Placed from ____ feet to ____ feet

Surface seal depth ____ Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

Sealing procedure used ☒ Slurry pit ☐ Temporary surface casing ☐ Overbore to seal depth

Benitue

6. LOCATION OF WELL

Sketch map location must agree with written location. 63

Subdivision Name

Lot No. ____ Block No.

County Ada

SE ¼ ____ ¼ Sec. 11, T. 4 N/S, R. 1 E/W

7. WATER LEVEL

Static water level ____ feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow 20

Temperature ____ °F. Quality

Artesian closed-in pressure ____ p.s.i.

Controlled by ☒ Valve ☒ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

40077

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	23	?		
	23	41	Sand	X	
	41	96	Sandy Clay		X
	96	124	mucky water	X	
	124	127	Clay		X
	131	134	fine Sand	X	

I left this well and came back next morning it was flowing.

this well was about 23 ft when I started. I don't know if it was perforated or not. they put a pump on it after I left.

10. Work started 2-1-74 finished 2-11-74

11. DRILLERS CERTIFICATION

Firm Name Brewer Well Driller Firm No. 176

Address Pearl Rt Eagle Date

Signed by (Firm Official) and (Operator) Warren Brewer

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

12

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

W

90

1. WELL OWNER

Name Bernie Lacey

Address 105 E 40th 83714

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☒ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
~~.250~~ inches	6 inches	+ 1 feet	74 feet
~~.188~~ inches	5 inches	~~7413~~ feet	~~7519~~ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Johnson
Type ~~stainless steel~~ Model No. 304
Diameter 5 Slot size 20 Set from ~~7519~~ feet to 84 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20 Material used in seal: ☐ Cement grout
☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☒ Slurry pit ☐ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name _____
Lincoln Park
Lot No. 16 Block No. _____

County Ada

S/W ¼ S/W ¼ Sec. 11, T. 4 ~~N~~/S, R. 1 E/~~W~~

7. WATER LEVEL

Static water level +10" feet below land surface.
Flowing? ☐ Yes ☒ No. G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
12	6	½

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	2	~~topsoil~~		X
	2	4	~~topsoil & gravel~~		X
	4	16	~~cemented sand & gravel~~	X	
	16	24	sand & gravel	X	
	24	32	cemented sand & gravel	X	
	32	63	brown clay		X
	63	65	sand	X	
	65	74	clay & sandy clay		X
	74	81	sand	X	

OCT 25

RECEIVED
MAY 13 1985
Department of Water Resources
Western Regional Office

RECEIVED
MAY 16 1985
Department of Water Resources

MICROFILMED

10.

Work started 4/9/85 finished 4/12/85

11. DRILLERS CERTIFICATION

22

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name W.E. Stevens & Son Firm No. 153
Address ~~3709 Hawthorne Dr~~ 1176 Date 5/8/85
Signed by (Firm Official) _____
and
(Operator) _____

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
9/82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

U PEWRITER OR
LLPOINT PEN

13

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Borup Construction

Address Boise, Id

Owner's Permit No. _____

2. NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☑ Rotary ☑ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☑ Steel ☐ Concrete ☐ Other PVC

Thickness	Diameter	From	To
.250 inches	6" inches	1' feet	37'8" feet
.188 inches	5" inches	37' feet	54' feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

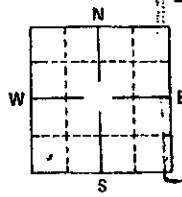
Was casing drive shoe used? ☑ Yes ☐ No
Was a packer or seal used? ☐ Yes ☑ No
Perforated? ☑ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch (saw)
Size of perforation _____ inches by _____ inches

Number	From	To
160 perforations	49 feet	54 feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☑ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 30 Material used in seal: ☐ Cement grout ☐ Bentonite ☑ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☑ Overbore to seal depth
Method of joining casing: ☐ Threaded ☑ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Ada
SW ¼ SW ¼ Sec. 11, T. 4 N, R. 1 W.

7. WATER LEVEL

Static water level 31' feet below land surface.
Flowing? ☐ Yes ☑ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☑ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30	15	1

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9"	0	1	Topsoil		✓
9"	1	8	Brown gravel		✓
9"	8	30	Brown gravel + sand	✓	
9"	30	40	Brown clay		✓
6"	40	42	Brown sand	✓	
6"	42	48	Brown clay		✓
6"	48	56	White + Brown sand	✓	

RECEIVED
JUL 10 1987
Department of Water Resources

RECEIVED
JUL 27 1987
Department of Water Resources
Western Regional Office

10. Work started 6-9-87 finished 6-10-87

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name SOS WELL DRILLING Firm No. 212
Address 4145 N Blackcat Road MERIDIAN, Id 83642 Date 6-16-87
Signed by (Firm Official) Frank Schmin
and
(Operator) Frank Schmin

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

APPENDIX C

WELL SITE PHOTOGRAPHS

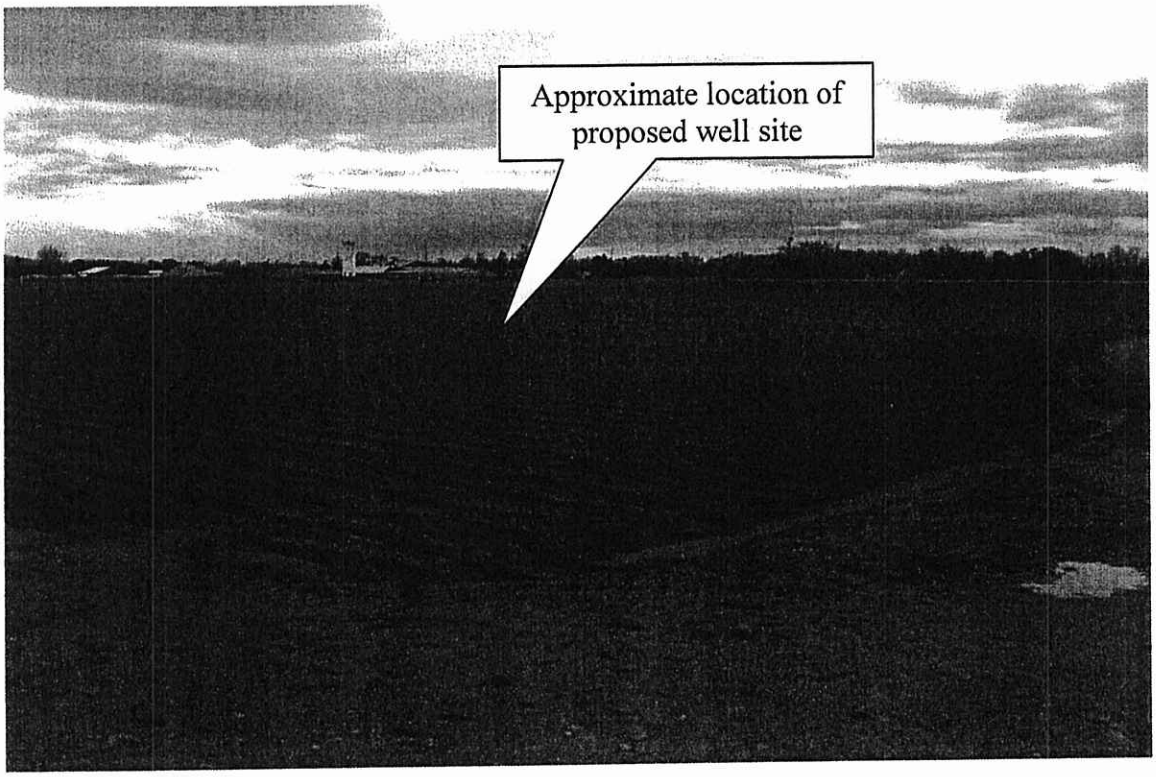


Photo 1. Current land use at the proposed well site is agricultural.

Photo 2. Looking north from proposed well site.

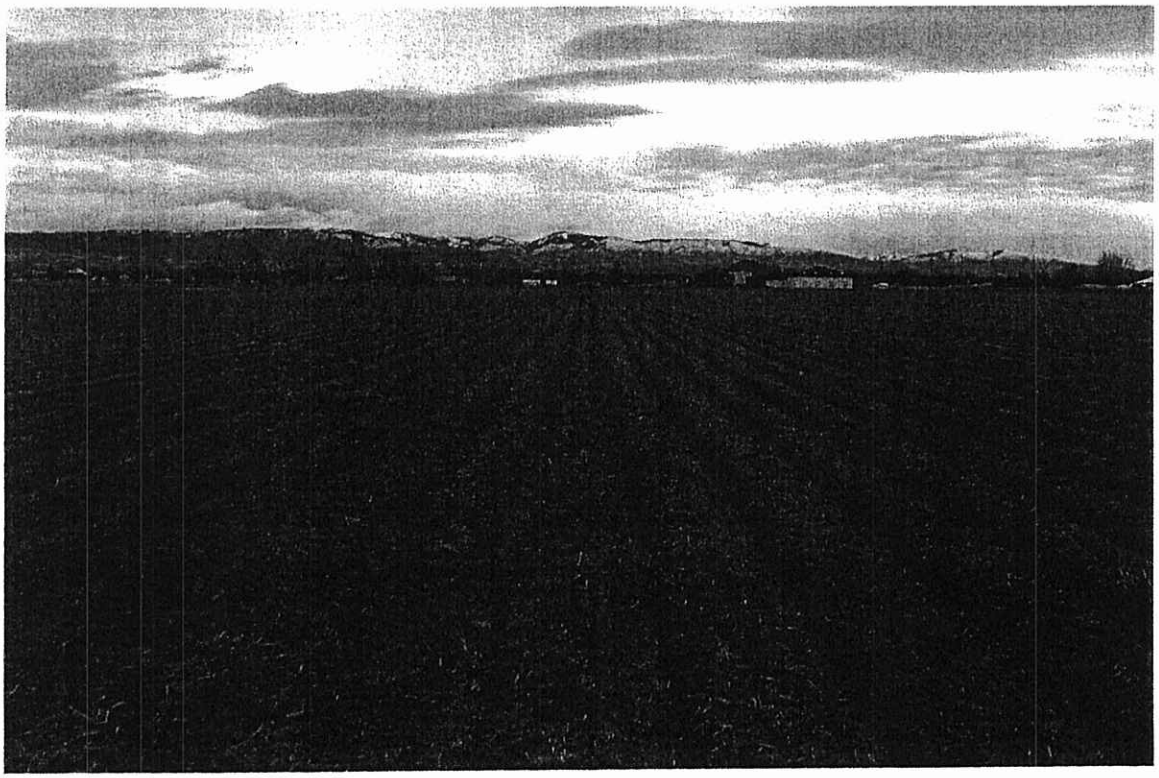


Photo 3. Looking east from proposed well site.

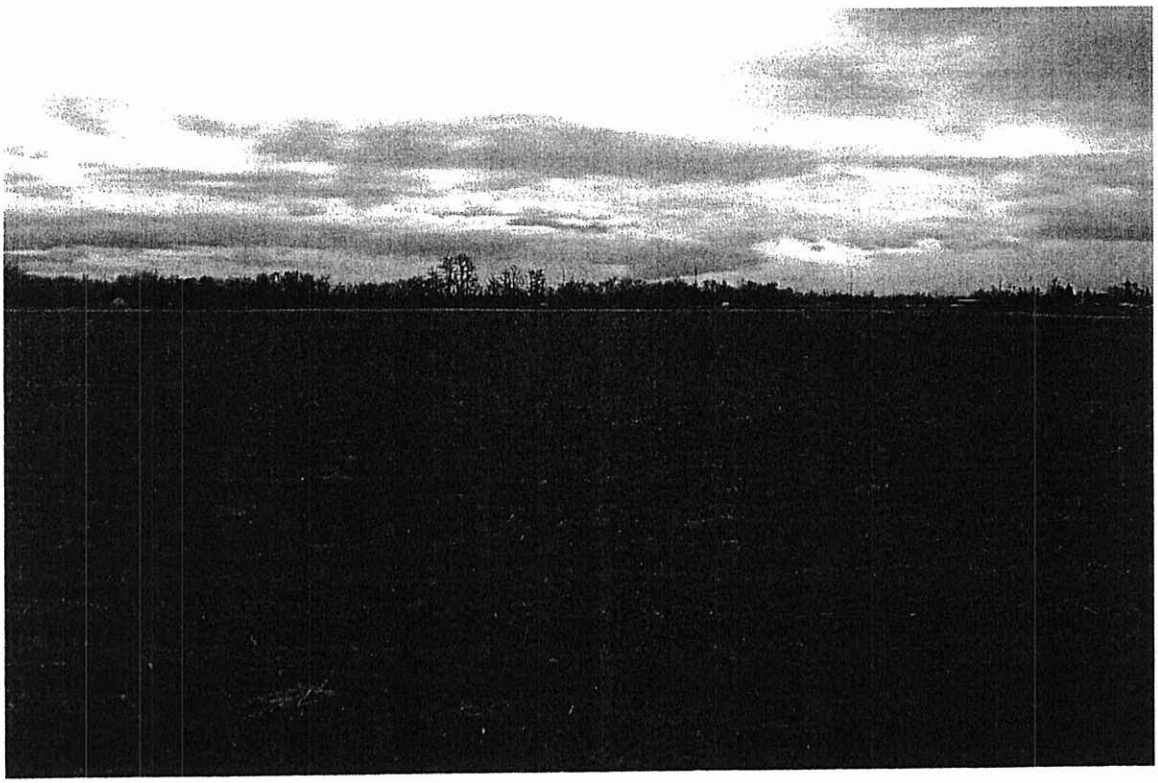


Photo 4. Looking south from proposed well site.

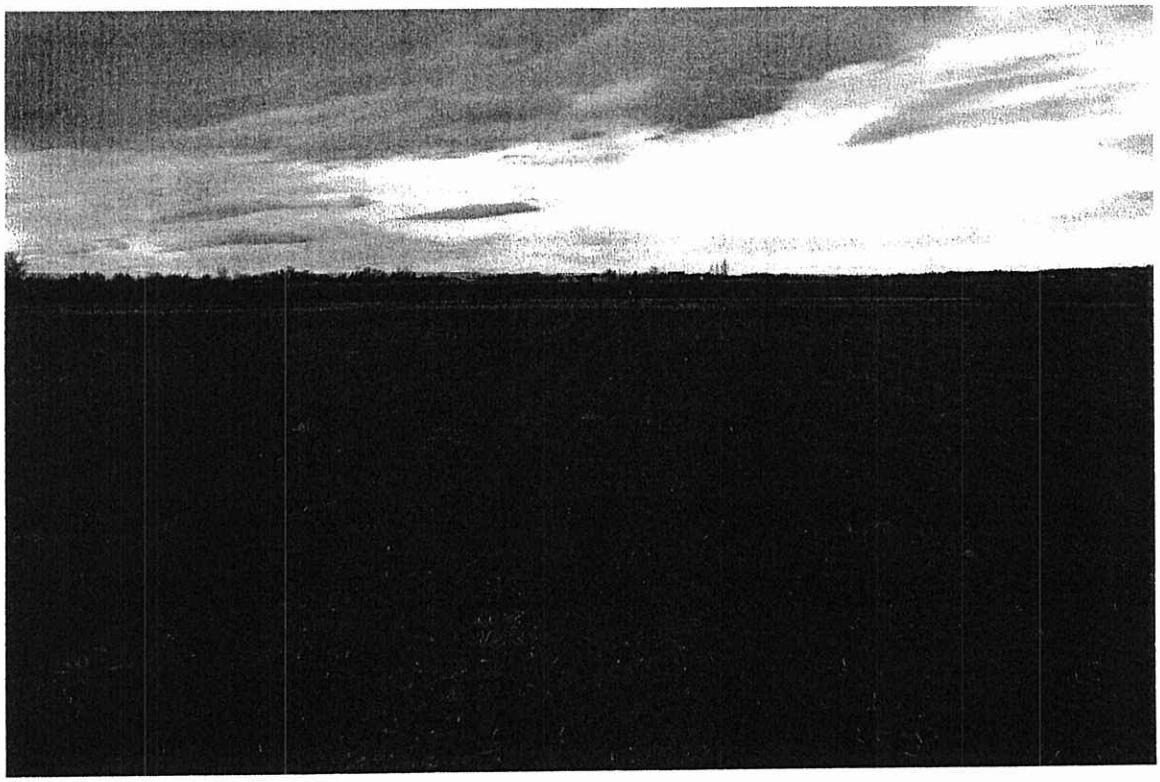
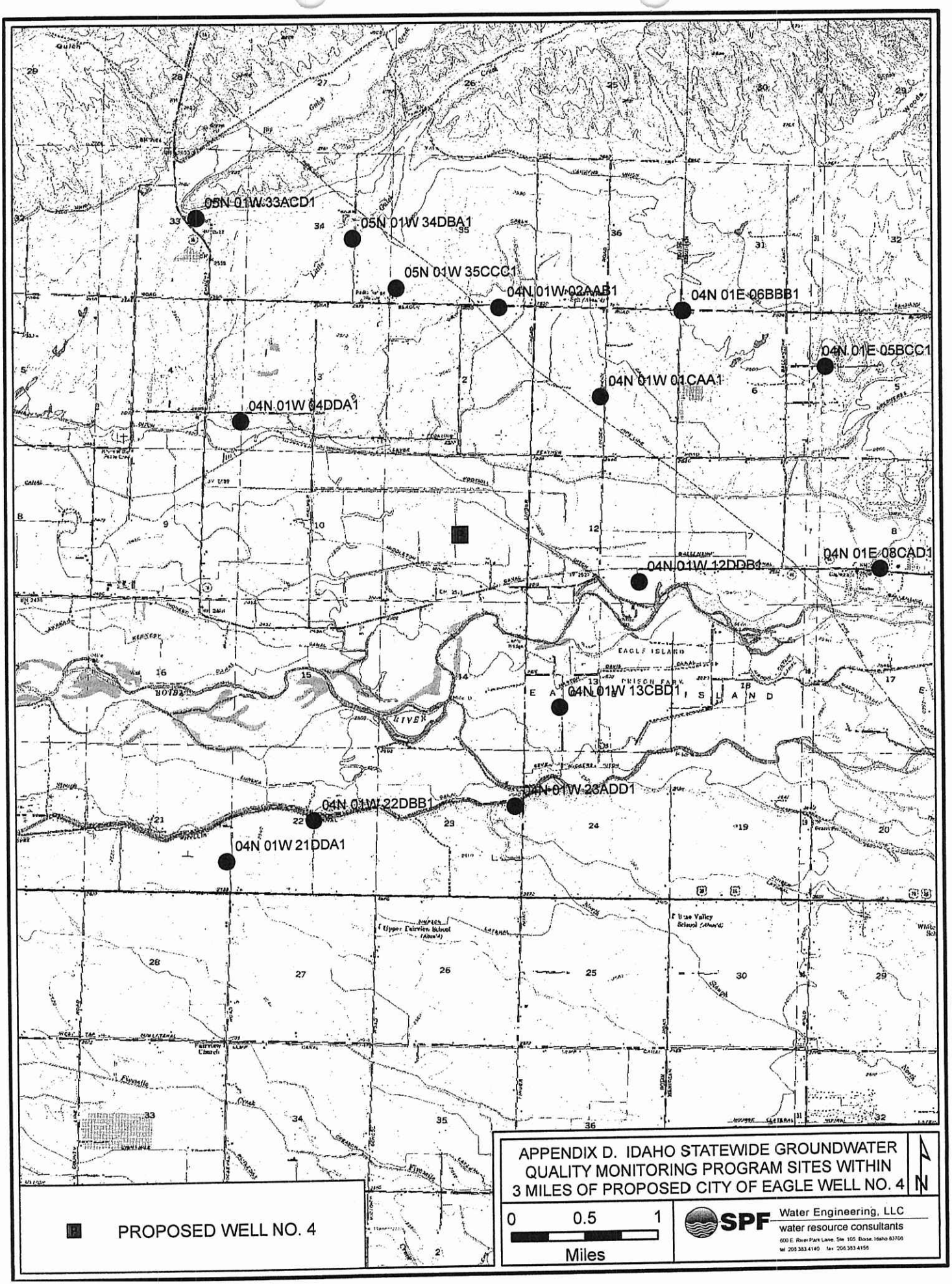


Photo 5. Looking west from proposed well site.

Photo 6. Drainage ditch located approximately 180 feet west of proposed well site.

APPENDIX D

WATER QUALITY DATA


05N 01W 33ACD1
05N 01W 34DBA1
05N 01W 35CCC1
04N 01W 02AAB1
04N 01E 06BBB1
04N 01E 05BCC1
04N 01W 01CAA1
04N 01W 04DDA1
04N 01E 08CAD1
04N 01W 12DDB1
04N 01W 13CBD1
04N 01W 26ADD1
04N 01W 22DBB1
04N 01W 21DDA1
EAGLE ISLAND
PRISON FARM
BOISE RIVER
PROPOSED WELL NO. 4
APPENDIX D. IDAHO STATEWIDE GROUNDWATER QUALITY MONITORING PROGRAM SITES WITHIN 3 MILES OF PROPOSED CITY OF EAGLE WELL NO. 4
N
0
0.5
1
Miles
SPF Water Engineering, LLC
water resource consultants
600 E. River Park Lane, Ste. 105, Boise, Idaho 83706
tel: 208.383.4140 fax: 208.383.4156

PROPOSED CITY OF EAGLE WELL NO. 4
AREA GROUNDWATER QUALITY DATA SUMMARY[2]
WELLS WITHIN 3 MILES

Well Location	Well Depth (feet)	Ground Elevation (feet)	Bottom Elevation (feet)	Aquifer	Years Sampled	Gross Alpha (pCi/L)	Arsenic (µg/L)	Gross Beta (pCi/L)	Fluoride (mg/L)	Iron (µg/L)	Manganese (µg/L)	Nitrate (mg/L)	TDS (mg/L)	Ammonia (mg/L)	1,2-Dichloropropane (µg/L)	Pesticides Detected[1]
Primary MCL						*15*	*10*		*4*	---	---	*10*	---	---	*5*	---
Secondary MCL									*2*	*300*	*50*	---	*500*	---	---	---
04N01E05BCC1	39	2590	2551	111TRRCO	1994, 1998	0.6 - 2.7	12 - 13	3.2 - 4.1	0.3	<10	<4	1.2 - 1.4	148 - 200	0.02 - 0.05	<0.5	NO
04N01E06BBB1	67	2601	2534	111TRRCO	1991, 1995, 1999, 2004	1.1 - 4.7	22 - 32	3.8 - 7	0.3 - 0.4	<10	<2.2	1.2 - 4.2	220 - 331	<0.04	<0.5	YES
05N01W35CCC1	84	2582	2498	111TRRCO	1994, 1998	4.1 - 7.6	15 - 18	5.4 - 7.2	0.3 - 0.4	6	<4	7.7 - 36	262 - 355	0.01 - 0.05	<0.5	YES
04N01W02AAB1	68	2552	2484	IDAHO GROUP	1991, 1995, 1999, 2004	5.8 - 6.4	22 - 39	5.1 - 9.6	0.3	<10	6 - 14	8.8 - 11	397 - 443	<0.04	<0.5 - 19.1	YES
04N01W13CBD1	32	2515	2483	TERRACE GRAVEL, YOUNGER	1993, 1997, 1999, 2002	2.1 - 6.9	<1 - 1	3.3 - 4.3	0.4	610 - 1900	880 - 1150	<0.05	162 - 199	0.09 - 0.14	<0.5	YES
05N01W33ACD1	108	2590	2482	111TRRCO	1994, 1998, 2003	0.9 - 7.5	5 - 8	2.9 - 3.1	0.4 - 0.5	<3 - 13	<1 - 3.4	1.8 - 3.1	191 - 249	0.02 - 0.05	<0.5	YES
04N01W22DBB1	93	2545	2452	TERRACE GRAVEL, OLDER	1992, 1996, 2000	36.1 - 40.9	1 - 2	31.8 - 33.1	0.3	<2	<2	3.4 - 4.6	430 - 441	<0.02 - 0.04	<0.5	YES
04N01W12DDB1	81	2531	2450	IDAHO GROUP	1991, 1995, 1999, 2004	1.6	1 - 2	2.6	0.3	<10 - 37	<2 - 19	0.7 - 0.9	160 - 191	<0.04	<0.5	NO
05N01W34DBA1	138	2585	2447	IDAHO GROUP	1993	8.3	7	8.5	0.3	12	8	0.9	246	0.02	2.1	YES
04N01W04DDA1	120	2523	2403	IDAHO GROUP	1993, 1997, 2002	7.4 - 10.2	3.5 - 4	5.7 - 8.9	0.5 - 0.6	<10	<2	6.8 - 14.1	242 - 353	<0.04	<0.5	YES
04N01W21DDA1	139	2535	2396	TERRACE GRAVEL, OLDER	1994	5.4	1	5.7	0.2	4	4	1.0	227	0.02	<0.5	NO
04N01W23ADD1	203	2562	2359	IDAHO GROUP	1992, 1996, 2000	31.2 - 40.7	<1	19.3 - 19.7	0.2 - 0.3	<10	<1 - 3	2.8 - 3.0	372 - 409	<0.02 - 0.04	<0.5	YES
04N01W01CAA1	260	2552	2292	IDAHO GROUP	1991, 1995, 1999, 2004	29.2 - 30.1	6 - 7.5	12.2 - 20.5	0.4 - 0.5	<10 - 1400	<2 - 3	3.8 - 4.7	360 - 394	<0.04	<0.5	NO
04N01E08CAD1	462	2562	2100	IDAHO GROUP	1991, 1995, 1999	0.6 - 1.7	1	1.4 - 3	0.4	81 - 310	99 - 170	<0.06	172 - 181	0.09 - 0.33	<0.5	NO
Proposed Well	*450*	*2512*	*2062*	*IDAHO GROUP*												

[1] Pesticides were detected at concentrations below applicable primary drinking water standards.

[2] Data downloaded from the IDWR Idaho Statewide Ground Water Quality Monitoring Program database on December 28, 2005.

APPENDIX E

DEQ CONSULTATION

Jennifer Sukow

From: Dennis.Owsley@deq.idaho.gov
Sent: Wednesday, December 28, 2005 2:34 PM
To: Jennifer Sukow
Cc: Thomas.Neace@deq.idaho.gov
Subject: RE: water quality query
Attachments: eagle.jpg

Jennifer

Attached is a map showing the potential contaminant sources in that area. I did a query of all sources within 3.5 miles upgradient (to the southeast) and came up with some rough numbers:
3 gravel pits
3 LUST sites / 5 UST sites
NO3 concentrations from ISDA wells = 2.0 mg/L
2 AST sites
13 Business Mailing List entries for potential contaminant sources
1 SARA Title III Facility
Pesticide Priority Area

As noted above, these are all just potential sources of contamination. Our database does not show any contaminant plumes in that area.

Please call or email me if you have any questions or need additional information.

Thanks
Dennis

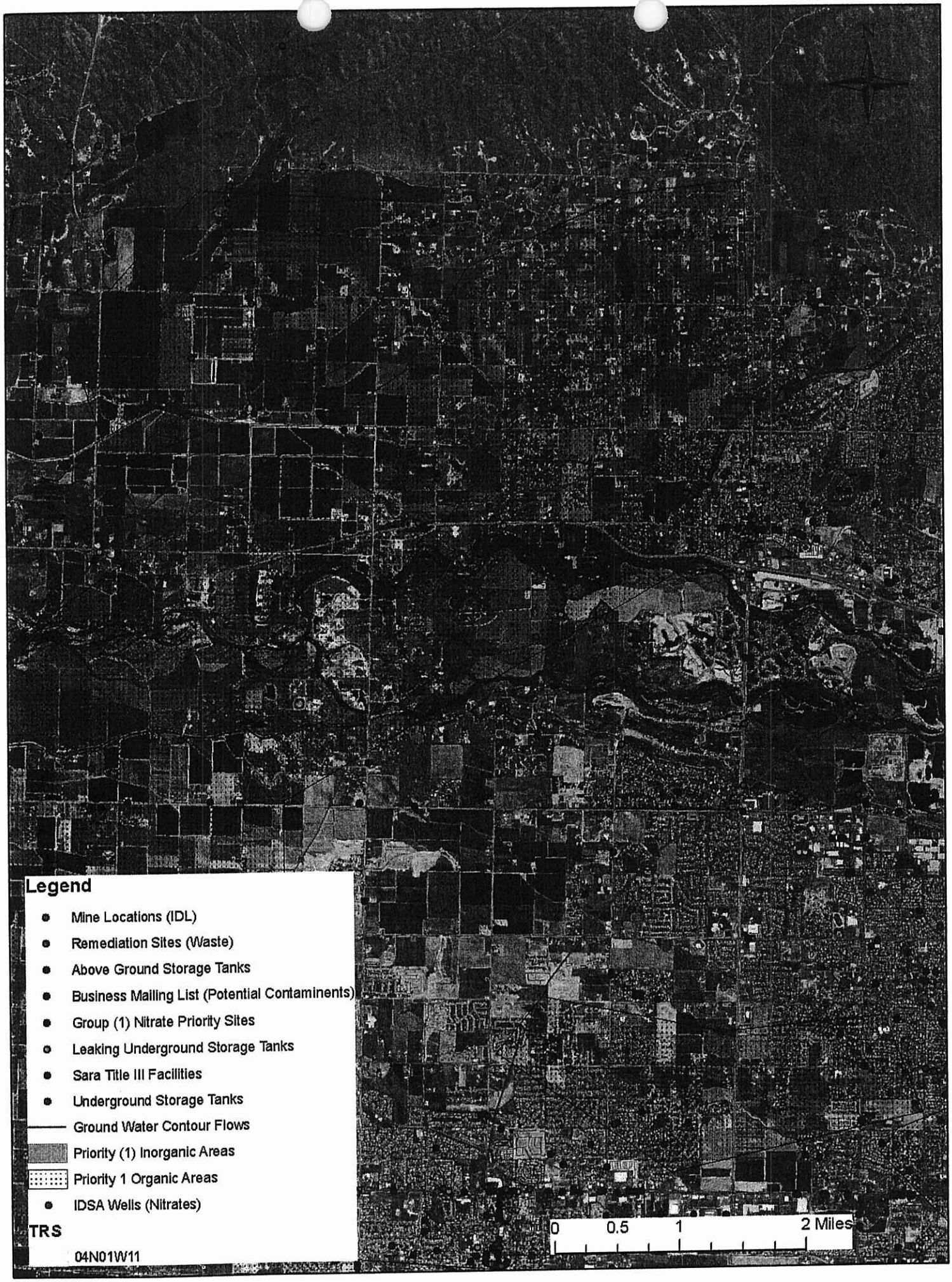
From: Jennifer Sukow [mailto:JSukow@spfwater.com]
Sent: Wednesday, December 28, 2005 10:22 AM
To: Dennis Owsley
Cc: Thomas Neace
Subject: water quality query

Dennis,

Thank you for your response on the Garden Valley site. I am working on another well site evaluation near Eagle. I am contacting you to inquire about potential groundwater quality issues (i.e. known contaminant plumes and/or sources of contamination) in the area.

The well site is located in the NW ¼ SE ¼ of Section 11, T4N R1W. The site location is shown on the map in the attached file.

Thank you for your assistance.


Legend
Mine Locations (IDL)
Remediation Sites (Waste)
Above Ground Storage Tanks
Business Mailing List (Potential Contaminents)
Group (1) Nitrate Priority Sites
Leaking Underground Storage Tanks
Sara Title III Facilities
Underground Storage Tanks
Ground Water Contour Flows
Priority (1) Inorganic Areas
Priority 1 Organic Areas
IDSA Wells (Nitrates)
TRS
04N01W11
0
0.5
1
2 Miles

APPENDIX F

WATER RIGHT PERMIT APPLICATION AND DRAFT DRILLING PERMIT

Water Right Report

Close

12/29/2005
IDAHO DEPARTMENT OF WATER RESOURCES
Water Application Report

WATER RIGHT NO. 63-32089

Owner Type	Name and Address
Current Owner	CITY OF EAGLE PO BOX 1520 EAGLE, ID 83616 (208)939-6813
Representative	HOLLADAY ENGINEERING CO CHRIS DUNCAN PO BOX 235 PAYETTE, ID 83661 (208)642-3304

Priority Date: 01/19/2005
Status: Active

Source	Tributary
GROUND WATER	

Beneficial Use	From	To	Diversion Rate	Volume
MUNICIPAL	01/01	12/31	4 CFS	
Total Diversion			4 CFS	

Location of Point(s) of Diversion:

GROUND WATER	NWNE	Sec. 10	Township 04N	Range 01W	ADA County
GROUND WATER	NWNW	Sec. 10	Township 04N	Range 01W	ADA County
GROUND WATER	SENW	Sec. 11	Township 04N	Range 01W	ADA County
GROUND WATER	NWSE	Sec. 11	Township 04N	Range 01W	ADA County
GROUND WATER	NWSE	Sec. 11	Township 04N	Range 01W	ADA County

Place(s) of use: No POUs found for this right

Dates:
Date Application Received: 01/19/2005
Date Application Denied:
Last Date of Beneficial Use:
Extension End Date:
Protest Deadline Date: 5/9/2005

State of Idaho
DEPARTMENT OF WATER RESOURCES
Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190
FAX (208) 334-2348

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

December 22, 2005

Chris Duncan
Holladay Engineering Co.
P.O. Box 235
Payette, ID 83661

RE: Approval of Pump Test Plan – City of Eagle (Water Rt. Appl. No. 63-32089 & 63-32090).

Dear Mr. Duncan:

The Idaho Department of Water Resources (Department) has completed a final review of the revised Pump Test Plan submitted by Holladay Engineering Company. The Department concludes that this plan is acceptable. The plan is hereby approved and will be attached to the City of Eagle drilling permits (see conditions #16 & #17 of the drilling permits). As we discussed in our telephone conversation of December 21, 2005, the Department requests the following additions or modifications to the plan:

1) Barometric pressure should be monitored and recorded to coincide with all water level measurements both pre-test and during the test.
2) Maximum frequency of water level measurements should not exceed 1 hour.
3) Raw data will be submitted to the Department within 10 days of completing the test.
4) A "step-test" will be performed on test wells No. 1 & 2 to determine specific capacity, prior to conducting the actual pump test.

If you have any questions concerning this letter, please contact me at this office.

Respectfully,

ROBERT B. WHITNEY
Sr. Water Resource Agent

Printed 12/19/2005
Drilling Permit No. 837870
Well Tag No. D0042405
Well ID # 408297
Water Right No. 63-32090, 63-32089
Receipt # W033645
Approved Date 12/22/2005

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Phone: (208)939-6813

Relationship: Applicant
Name: CITY OF EAGLE
Address: PO BOX 1520
EAGLE ID 83616

Proposed Well Location: Township 04N, Range 01W, Section 11, NW, SE
COUNTY ADA Block 8 Sub Name WELL #2; LOTS 83 & 84, BLK 8,
EAGLEFIELD ESTATES SUB

Street Address of Well Site: 50 FT W OF INTERSECTION OF W TATLOCK DR & N GOLDEN CROWN
EAGLE ID

Proposed Use of Well: Domestic-Public Water Supply
Municipal
Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 16 Inches. Proposed Depth 500 Feet
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: Jan 03 2006

Anticipated Well Drilling Company: RIVERSIDE INC (No. 333)

Applicant's Signature: Orig. Appl. Attached Date 12-7-05

Title: _____

Well ID # 406472

Well Tag No. D0041980

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Thursday, December 22, 2005.

1. A geophysical log shall be run in the pilot boring of this well to determine specific locations of permeable units and confining layers.
2. Final design and completion of this well shall be approved by IDWR based on actual geologic conditions encountered in the pilot bore.
3. If an annular slurry seal of bentonite is to be utilized, a high (>30%) solids bentonite shall be pumped from the bottom up to land surface. The bentonite shall not contain chemical polymers which effect long term stability of the seal (and are often found in drilling fluid grade bentonites) but shall be a bentonite which has been specifically recommended by the manufacturer for use as a seal material in water wells.
4. Aquifers with significantly different head, temperature or quality shall not be commingled.
5. The location at which this well is to be constructed must be at a site approved by the Idaho Department of Environmental Quality. The local Health District should also be contacted for septic tank/drain field locations. This well must not be drilled closer than 100 feet from any drain field or 100 feet from any septic tank.
6. All casing to be joined by welding shall have welds that are fully penetrating and at least as thick as the casing being joined. Both ends of casing joints shall be properly beveled and gapped to allow a fully penetrating root pass of E7018 or E6010 electrode. One or more additional passes are required to completely fill any remaining groove at the weld joint. Single-pass weld joints are not acceptable for joining steel casing.
7. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
8. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
9. Approval of this drilling permit does not authorize trespass on the land of another party.
10. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
11. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
12. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
13. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
14. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
15. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.

16. Pump testing of this well is limited to a quantity and duration specifically authorized by the Department and is included as an attachment to this drilling permit. Prior to diverting any water from this well the well owner shall execute and sign a Memorandum of Understanding (MOU) with the department.
17. Diversion and use of water from this well for purposes other than an approved pump test is not authorized unless the well owner has obtained a valid water right listing the well as a point of diversion.
18. Approval of this drilling permit does not suggest any intent by the Department to approve or process a water right application that would authorize use from this well.
19. This drilling permit is not valid and well construction shall not commence until a bond is secured by the well owner in favor of the director in a sufficient amount for proper abandonment of this well. The bond for this well shall be $15,000.
20. This drilling permit is approved for the construction of a "Production Test" well intended to be used for determining sufficiency of water supply and evaluating the effect of pumping on a regional or local aquifer system.
21. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well.
22. The uppermost unconfined aquifer shall be cased and sealed to exclude water from this zone from entering the well. All seals will be placed from the bottom up. Placement of any seal should be based upon actual geologic conditions encountered during drilling.
23. The project engineer or geologist will be on site during seal placement should any peculiarities arise which require further evaluation. Any alteration of the proposed well construction procedure shall be approved by the Department before it is undertaken.
24. The well owner hereby assumes all risks associated with constructing this well prior to obtaining a water right authorizing use from the well. This risk may include a directive by the Department to plug and abandon the well.
25. The screened, perforated, filter packed or otherwise open and commingled strata shall not exceed 25% of the total well depth as measured from the bottom of the open interval to the top of the open interval(s). If, however, through geophysical logging of the well (or other means), it can be demonstrated the aquifers to be produced from are under similar hydraulic head, temperature and quality and are not subject to waste or contamination, a greater open interval (screened or filter packed section) may be approved by the Department.
26. If an annular space of at least 4 inches greater than the outside diameter of the casing is provided, bentonite chips may be poured at the manufacturers recommended rate or no greater than 50 pounds in five minutes. The pour shall be presifted through 1/4 inch mesh screen to reduce the introduction of fines. The top of the seal shall be tagged at regular intervals, i.e. (30 ft. intervals) during placement with a sinker bar or other appropriate device to ensure the seal is reaching the intended depth. If bridging occurs, the Department shall be contacted immediately for evaluation.

Signature of Authorized Dept Representative

Water Region Manager
Title

Form 236-1
1/31/03

RECEIVED
DEC 0 8 2005
WATER RESOURCES
WESTERN REGION

RECEIVED
DEC 0 1 2005
WATER RESOURCES
WESTERN REGION

Drilling Permit No. 892605-837870
Drilling Permit I.D. Tag No. D0042405
Water Right Permit No. 63-32089, 63-32090
Injection Permit No.

TEST WELL NO. 2
(EAGLEFIELD)

State of Idaho
Department of Water Resources

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): City of Eagle

2. Mailing Address: 310 E State St

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

3. Proposed Well Location: Twp. 4N Rge. 1W Sec. 11 1/4 NW 1/4 SE 1/4;
Gov't Lot No. ____ County Ada Lat ____ ____ ____ Long. ____ ____ ____

Street Address of Well Site 50' W of intersection of W Tatlock Dr & N Golden Crown Wy City Eagle
Give at least name of road + Distance to Road or Landmark

Lot, block and subdivision Lots 83 & 84 Block 8 of Eaglefield Estates Subdivision

4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to ¾ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Livestock Type ____ Number Hd. ____ [X] Municipal [X] Test [ ] Industrial [ ] Other PWS (Describe)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit. No. of proposed wells: ____

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 16 inch Proposed Maximum Depth 500 feet

C. Anticipated bottom hole temperature:
[X] 85 F or less (Cold Water Well)
[ ] 85 F to 212 F (Low Temp. Geo. Well)
[ ] 212 F. or more (Geothermal Well)

6. Construction Start Date: December 20, 2005

7. Anticipated Well Driller: Riverside, Inc Driller's Lic. No. 333
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: Tom Bastian Date December 7, 2005

Address (if different than owner): ____

City: Eagle State: ID Zip Code: 83616 Telephone (208) 939-6813

Title: President, Eagle City Council
(Owner, Firm Representative, Other)

Prepared by Holladay Engineering Company

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit Is _____. Date _____

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one(1) year from the approval date for completion of the well unless an extension has been granted.

2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare, which may be required before construction of the well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.

3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.

4. Approval of this drilling permit does not authorize trespass on the land of another party.

5. This permit does not constitute other local, county, state or federal approvals, which may be required for construction of a well.

6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.

7. If a bottom hole temperature of 85 or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.

8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Department for reconsideration pursuant to Section 67-5243, Idaho Code.

10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.

SPECIFIC CONDITIONS:

_____ _____

Signature of Authorized Department Representative Title

Receipt No. W033645 Receipted by DB Fee $200 - Date 12/1/05

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____

Form 233-1 – Page 1 of 2
11/6/2000 (LDT)

Drilling Permit No. _____
Tag No. _____
Work Completion Date _____

Test Well No. 2

State of Idaho
Department of Water Resources

Cash Bond Pledge

To: WASHINGTON FEDERAL SAVINGS
(Bank or Savings and Loan Association)

Address of Bank or Savings & Loan association – Must be in Idaho

Street or PO Box 701 E STATE ST SUITE 100

City EAGLE, State Idaho, Zip Code ID 83616

FOR VALUE RECEIVED, I _____ do hereby assign, set over and pledge to the Director, Idaho Department of Water Resources (Director) as a cash bond, or cash deposit the sum of FIFTEEN THOUSAND dollars ($ 15,000.00) in an account carried in the name of PETER HARRIS being Account No. 030-9406411

This pledge is given in lieu of a Surety Bond to insure the construction, operation and maintenance of the well located in:

Township 4N, Range 1W, Section 11, ¼ NW ¼ SE ¼, County ADA;

Lot 5th Block 8 Subdivision Name Eagle Field

in compliance with Drilling Permit Conditions No. _____ of Permit No. _____, and the rules and regulations for well construction standards IDAPA 37.03.09, said pledge to remain in full force and effect until an approved water right is secured or until released in writing by the Director, whichever occurs first.

The interest paid on the account shall be paid to account holder PETER HARRIS this assignment and pledge being only for the principal amount.

Dated at Washington Federal this 28th day of December

_____
(Account Holder)

State of Idaho)
) ss
County of Ada)

On this 28th day of December, 2005, personally appeared before me the signer of the above instrument, who duly acknowledged to me that he he executed the same.

_____
Notary Public residing
at Eagle, Idaho
My commission expires 5-10-08

BARBARA S. McDERMOTT NOTARY PUBLIC STATE OF IDAHO

Form 213-1 - Page 2 of 2
11/6/2000

I, Barbara McDermott (Name) Branch Manager (Title)

do hereby acknowledge that Paler Harris

has on deposit fifteen thousand dollars ($ 15,000) which has been assigned to the Director,
which shall remain in force and effect until released by the Director.

Barbara McDermott
(Bank or Savings and Loan Official)

State of Idaho)
) ss
County of Ada)

Acknowledged on this 28th day of December 2005 before me:

SANDRA L. GERHARD NOTARY PUBLIC STATE OF IDAHO

Sandra L. Gerhard
Notary Public residing
at Boise, ID

My commission expires: 7/21/10

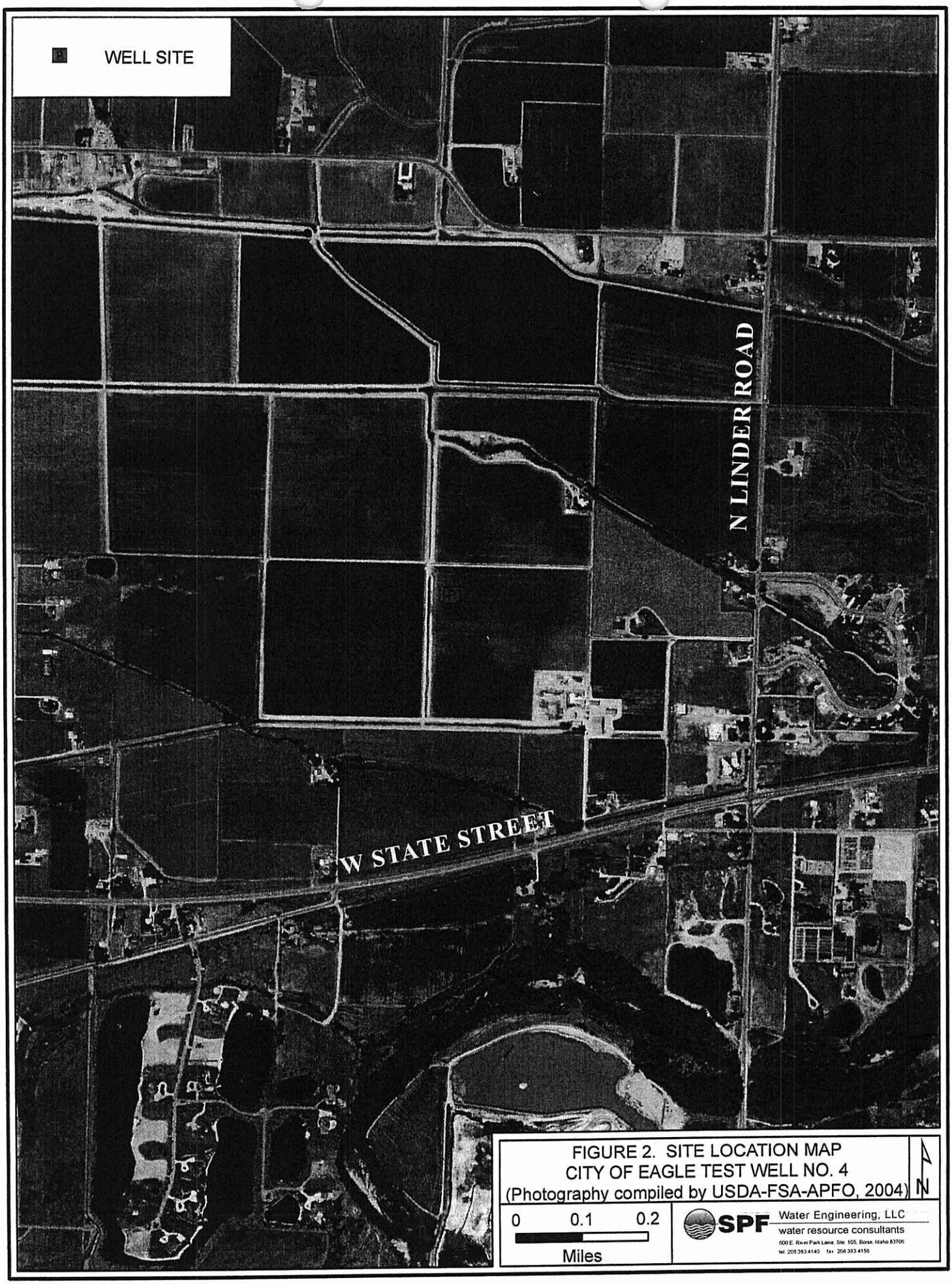


FIGURE 2. SITE LOCATION MAP
CITY OF EAGLE TEST WELL NO. 4
(Photography compiled by USDA-FSA-APFO, 2004)

N

0 0.1 0.2
Miles

SPF Water Engineering, LLC
water resource consultants
600 E. River Park Lane, Ste. 105, Boise, Idaho 83706
tel: 208.383.4140 fax: 208.383.4156

APPENDIX G

DEQ CHECKLISTS

1410 North Hilton • Boise, ID 83706-1255• (208) 373-0502

GENERAL PLAN AND SPECIFICATION REVIEW CHECKLIST

Revision: January 2005

A. *ADMINISTRATIVE COMMENTS*

All applicable checklists shall be completed and submitted with the application unless a particular Regional Office follows a different routine for particular types of projects. Contact the Engineering Manager for the DEQ Regional Office in your area for direction on this issue of required use.

Particular Regional Offices may also have additional information available for use by developers and consultants. Some of this information is in the form of "Design File Notes" (DFN's) or other guidance, which include explanations for filling out some of the checklists, guidance on particular issues, etc. These Design File Notes can be obtained from your local Regional Office Engineering Manager if they are applicable to your Region.

B. *GENERAL PROJECT INFORMATION*

1. Project Name: City of Eagle Well No. 4
2. Location: Eaglefield Subdivision, Golden Crown Way and Tatlock Drive

   City: Eagle County: Ada
3. Project Description: Test well / new public water system well
4. Project includes modifications to, or plans for a new:

   Public drinking water system ---------- ☒

   Public sewer system ---------- ☐

   Storm water disposal system ---------- ☐

   Pressure Irrigation system ---------- ☐
5. Design Engineer: Jennifer Sukow ☒ - PE

   Firm: SPF Water Engineering, LLC

   Address: 600 E River Park Lane City: Boise State: ID ZIP: 83706

E-mail Address: jsukow@spfwater.com

Phone: 208-383-4140

FAX: 208-383-4156

6. Project Owner or Developer: (Please provide exact name of owner or authorized representative)

Name: Peter Harris

Firm: Eaglefield, LLC

Address: 6951 Duncan Lane City: Boise State: ID ZIP: 83714

E-mail Address: Phone: (208) 939-4310

7. Name of entity that will operate and maintain completed systems (Please provide exact name of owner or authorized representative)

Name:

Firm: City of Eagle

Address: 310 E. State St. City: Eagle State: ID ZIP: 83616

E-mail Address: eaglecity@cityofeagle.org

8. Drinking water system is "Investor Owned" (Investor owned includes "C" or "S" Corporations, sole proprietorships, partnerships, LLC's, etc.) ☐ Yes ☒ No

(If yes, your system may also be regulated by the Idaho Public Utility Commission. Please contact the Idaho Public Utility Commission about your regulatory status.)

C. ***REQUIRED SUBMITTALS AND CERTIFICATIONS***

Projects will not be accepted unless all necessary submittals have been attached, or an explanation for their omission has been provided.

1. Submittals:

a. All pertinent DEQ checklists included? ---------- ☒

b. City Council or County approval attached? ---------- ☐

c. If a project will be platted, the submittal must include either the preliminary plat or, if available, the preliminary version of the final plat. ☐

d. If the project will be part of an existing water or sewer system, certifications that the existing systems will not be overloaded are provided: (check all that apply)

☐ - Calculations from a registered professional engineer

☐ - A letter(s) of certification from the owner(s)

e. Engineering inspection and as-built certification contract is attached. (This contract must cover pressurized irrigation systems, if part of the project.) ----------☒

Inspector's name and firm if different from design engineering firm: _____

2. Certifications:

a. The attached plans represent the final, approved set from the utility: ----------☒

b. The Dig-line number has been provided to owners and contractors: ----------☒

c. If the project will generate dewatering or other construction wastewater that discharges to State waters, then a Short Term Activity Exemption, or equivalent, has been obtained:----------☐

IDEQ representative issuing exemption: _____

d. If the project contains both water and sewer mains, but those services are provided by different utilities, contact DEQ: ----------☐

☐ - Show the water and sewer on the same plans

☐ - If not, prior approval must be received from DEQ

e. Construction without approval from DEQ, or without engineering supervision, is a violation of Idaho Code 39-118 (and/or associated state rules). We can assist you as needed to resolve these situations and request that you contact DEQ immediately if you learn of these violations:----------☒

f. All other easements, permits, and rights-of-way have been obtained:----------☒

D. PLANS & SPECIFICATIONS

1. Plans must have:

a. Cover sheet with Table of Contents for plan set: ----------☐

b. Clear vicinity map or written directions to location of project: ----------☐

c. North arrows: ----------☐

d. Bound and numbered pages: ----------☐

e. Index sheet showing overall layout of plan and profile sheets:----------☐

f. Plans (all sheets) and first page of specifications must be:

Signed - ☐ Dated - ☐ Stamped - ☐

2. A table of contents is included for engineering reports and bound specifications:----------☐

3. Identify the standard specifications used for this project (may be more than one):

☐ - *Idaho Standards for Public Works Construction (2003)*: Current date: _____

☐ - Municipality: _____ Current date: _____

☐ - Utility: _____ Current date: _____

☐ - Other: _____ Current date: _____

4. Non-potable mains are:

a. 10' from water lines: ---------- ☐

b. 50' from public or private wells: ---------- ☐

E. STORMWATER DISPOSAL

1. Storm water removal and treatment description:

_____

_____

2. Storm water ponds, basins, seepage beds, and appurtenant structures are in conformance with the current *Catalog of Storm Water Best Management Practices for Idaho Cities and Counties:* ----- ☐

a. BMP #s used: _____

b. Depth to seasonal high groundwater (SHGW): _____ ft

How determined? _____

c. Separation between SHGW and disposal system:

☐ - Greater than 5' where level can't be determined accurately

☐ - Greater than 3' where level is predictable

3. Storm water ponds, basins, infiltration systems, and appurtenant structures are on the plans: -------- ☐

4. Subsurface disposal or permanent unlined ponds must be at least 100' from any well: -------- ☐

5. Subsurface disposal or permanent unlined ponds must be at least 25' from any water line: -------- ☐

6. Geotechnical Report attached---------- ☐

7. Drainage Report attached---------- ☐

8. Other potable wells within 500': _____

F. PRESSURIZED IRRIGATION

This section is required for projects that include pressurized irrigation.

1. Plans and specifications for pressurized irrigation systems are provided: ---------- ☐

2. Additional information is included showing the design and management system:---------- ☐

3. Who will supply irrigation water for the system? _____

4. If the potable water system supplies a pressure irrigation system, specify a reduced pressure back-flow prevention device that is on the *Drinking Water List of Approved Back-flow Prevention Devices:* ---------- ☐

5. We understand that the record drawings or as-built certification must cover the pressurized irrigation system. ---------- ☐

Note: **This checklist addresses the majority of common items from the Idaho Rules for Public Drinking Water Systems (IRPDWS), the Recommended Standards for Water Works (RSWW), and common engineering practices. However, this checklist is not all-inclusive and users are expected to fully understand the rules and standards, apply them where necessary, and request interpretations from DEQ if there are any questions. DEQ regional offices may have additional written information that will assist in the design/approval process.**

All of the items indicated on the above checklist are accurately reflected in the attached Plans and Specifications.

Design Engineer's Signature: Jennifer Sukow Date: 1/18/2006

P.E. Stamp:

PUBLIC DRINKING WATER WELL SITE EVALUATION

DEPARTMENT OF ENVIRONMENTAL QUALITY

All public water well sites must be approved in writing by DEQ prior to drilling (*Idaho Rules for Public Drinking Water Systems [IRPDWS], Section 550.03.a).*

PROCEDURE

1. Call DEQ to determine if there is known groundwater contamination in the general area.
2. A registered professional engineer, geologist, or other consultant qualified in the field of hydrogeology must prepare a thorough site evaluation, including items listed below.
3. Submit evaluation to DEQ, and schedule a field inspection. The exact location of the well must be staked by the engineer prior to DEQ inspection.
4. If the well is acceptable, DEQ will issue written approval.
5. Plans and specifications for the well and pump house must be approved by DEQ prior to construction.

CHECKLIST FOR CONSULTANT

1. ☒ Name of project or water system. City of Eagle Well No. 4
2. ☒ Date DEQ contacted to discuss potential groundwater problems. _____
3. ☒ Name of person contacted. _____
4. ☒ Provide a narrative discussion explaining why the site was chosen and why it is suitable for a public water system well. Discussion must include the following:
   - a. ☒ Location (include separate vicinity map with directions to the site) (IRPDWS 550.03.a)
   - b. ☒ Well lot must be dedicated to the water system only, and on property owned or leased by the water system. Contact DEQ if the well lot is part of a larger commonly owned property. (IRPDWS 550.03.o)
   - c. ☒ Terrain and access for drilling rig and equipment (CEP)
   - d. ☒ Floodways and floodplains (IRPDWS 551.01.n)
   - e. ☒ Surrounding land use (residential, commercial, industrial, open space, etc.) (IRPDWS 550.03.a.vi)
   - f. ☒ Anticipated production rate of well (IRPDWS 550.03.a.iv)
   - g. ☒ Description of soils and lithology (provide well log from nearby wells) (IRPDWS 550.03.a.ii,iii)
   - h. ☒ Anticipated depth to well screen; type and depth of annular seal (IRPDWS 550.03.c)
   - i. ☒ Discussion of groundwater quality, and any known contamination within 1 mile (IRPDWS 550.03.a.i)

j. ☒ Underground geological data and well logs of existing nearby wells (IRPDWS 551.01.p.iii)

k. ☒ Aquifer recharge projects or injection wells within 1 mile, and how they influence the proposed well. (IRPDWS 550.03.a.iv)

l. ☒ How the well will be protected against sources of pollution, or the how site conforms to the local well head protection plan (contact the city or county to determine implemented plans). (RSWW 3.2.3.3)

m. ☒ Potential for the well to be "Groundwater Under the Direct Influence of Surface Water (GWUDI; see *GWUDI Evaluation Procedure on page 3*). (IRPDWS 551.01.l)

n. ☒ Other evaluated well sites (RSWW 1.1.7.2.a)

o. ☒ Professional opinion that the site is suitable for a public water supply well (RSWW 1.1.7)

p. ☒ Sign and date the evaluation (IRPDWS 551.04.a.i)

5. ☒ Provide a site map covering at a 50 ft. radius showing the following:

a. ☒ Well location (include vicinity map with directions to the well site) (RSWW 551.01.a)

b. ☒ Direction of ground water flow (IRPDWS 550.03.a.iii)

c. ☒ Potential sources of contamination within 500 feet of the well (IRPDWS 550.03.a.vi)

d. ☒ Distance from well to lot boundaries (50 feet minimum) (IRPDWS 550.03.o, 551.01.p.ii)

e. ☒ Surface water sources, including lakes, rivers, canals, ditches, etc. (50 feet minimum separation) (IRPDWS 550.03.b)

f. ☒ Slope of the land (IRPDWS 551.01.n)

g. ☒ Septic tanks and drain fields (100 feet minimum separation for small systems; contact DEQ regarding separation and hydrologic analysis requirements for large disposal systems). (IRPDWS 550.03.b)

h. ☒ Sewer, storms drains, irrigation, and other non-potable mains or service lines (50 feet minimum) (IRPDWS 550.03.b)

i. ☒ Other buried utilities (IRPDWS 550.03.b)

j. ☒ Subsurface storm water disposal facilities or storm water ponds (100 feet minimum) (IRPDWS 550.03.b)

k. ☒ Injection wells IRPDWS 550.03.b)

l. ☒ Fuel tanks (50 feet minimum unless containment is provided). (IRPDWS 550.03.b)

m. ☒ Roads and parking areas (50 feet minimum). (IRPDWS 550.03.b)

n. ☒ Buildings (50 feet minimum) (IRPDWS 550.03.b)

o. ☒ Livestock (50 feet minimum) (IRPDWS 550.03.b)

p. ☒ Other potential sources of contamination (50 feet minimum) (IRPDWS 550.03.b)

NOTE: DEQ recommends (and may require) distances greater than the minimums previously listed, if appropriate to protect public health

REFERENCES

Idaho Rules for Public Drinking Water Systems

Recommended Standards for Water Works (also known as "Ten States Standards") 2003

Administrative Rules of the Idaho Water Resource Board: Well Construction Standards, Rules

Idaho Wellhead Protection Plan

Cities and water purveyors are encouraged to develop wellhead protection plans to prevent contamination of groundwater used for drinking water. DEQ has developed a guidance manual to help communities prepare their plans. The *Idaho Wellhead Protection Plan* is available at the regional DEQ office.

GWUDI Evaluation Procedure (Contact DEQ)

The system owner must demonstrate, prior to serving the public, that the proposed source of water is unlikely to be considered as Groundwater Under the Direct Influence of Surface Water (GWUDI). DEQ will issue a determination with written approval of the site in accordance with the following guidelines:

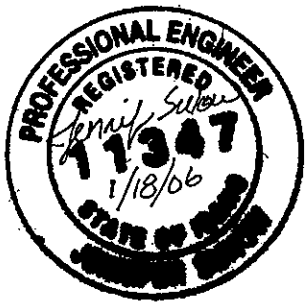
1. Sources within 200 feet of surface water must be evaluated for a six month period, per Procedure II in the protocol, unless hydrogeologic information is provided to show that testing is not required. (Surface *water is defined as water that flows or is ponded for more that 60 days per year: the days do not have to be continuous*)
2. Well located between 200 and 500 feet from surface water are usually allowed less rigorous monitoring, and are allowed to serve customers, under Procedure II in the protocol.
3. Well located more than 500 feet from surface water are generally deemed "groundwater" unless the aquifer is very shallow (e.g., springs or shallow well fields) or vulnerable to surface water (e.g., not protected by adequate confining layers).

Note: **This checklist addresses the majority of common items from the Idaho Rules for Public Drinking Water Systems (IRPDWS), the Recommended Standards for Water Works (RSWW), and common engineering practices. However, this checklist is not all-inclusive and users are expected to fully understand the rules and standards, apply them where necessary, and request interpretations from DEQ if there are any questions. DEQ regional offices may have additional written information that will assist in the design/approval process.**

All of the items indicated on the above checklist are accurately reflected in the attached Plans and Specifications.

Design Engineer's Signature: Jennifer Sukow Date: 1/18/06

P.E. Stamp:



DRINKING WATER WELL CONSTRUCTION DESIGN CHECKLIST

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

Project Name: City of Eagle Well No. 4, Eaglefield Subdivision

Water System Name: City of Eagle

I. *ADMINISTRATIVE COMMENTS*

		Yes	No	NA
A.	All applicable checklist items must be **specifically addressed in the plans and specifications,** in a manner that clearly shows how each item will be satisfied. Numbers in parentheses refer to applicable sections of either the *Recommended Standards for Water Works,* 2003 Edition (RSWW) or the *Idaho Rules for Public Drinking Water Systems* (IRPDWS). The acronym (CEP) after some of the items stands for Common Engineering Practice. If rules or standards are to be used for construction, they must be written on the plans or included in the specifications, not merely referenced.	☒		
B.	Written justification must be provided for any crosshatched areas that are checked.	☒		

II. *DOCUMENTS REQUIRED FOR A COMPLETE SUBMITTAL*

		Yes	No	NA
A.	Well Construction Checklist (this checklist).	☒		
B.	General Plan and Specification Review Checklist.	☒		
C.	Three complete sets of stamped plans and specifications. (One set will be kept for DEQ files). (CEP)	☒		
D.	Well Design Engineering Report. (IRPDWS 551.01)	☒	☐	☐
E.	A signed inspection contract. (RSWW 1.6)	☒		

III. *ADMINISTRATIVE REQUIREMENTS*

		Yes	No	NA
A.	Was IDWR consulted prior to well design? ***A copy of this submittal package is being sent to Rob Whitney at IDWR Western Region.***	☐	☒	
B.	Application to Appropriate Water filed with IDWR (IDAPA 37.03.08.035.01.a) and an approved Permit to Appropriate Water included with submittal. (CEP) ***Application has been filed and advertised by IDWR. Application was protested. Well will be constructed as a test well and used to conduct aquifer testing to address protests.***	☐	☒	

C. Application for Drilling Permit filed with IDWR. (IDAPA 37.03.09.045.01.a) Note: Water Rights and Drilling Permit must be approved by IDWR prior to construction.

D. Written approval of the well site received from DEQ. (IRPDWS 550.03.a)
Well site evaluation is being submitted to DEQ as part of this package.

	Yes	No	NA
C	☒		
D	☐		

	Yes	No	NA
E. Professional engineering & inspection services available during well construction? (IRPDWS 551.04.c)	☒		
F. Are minimum separation distances from non-potable water systems, property lines, surface waters, and other sources of contamination provided? (IRPDWS 550.03.b)	☒		

IV. MATERIAL AND EQUIPMENT

	Yes	No	NA
A. Specifications for material transportation, handling, storage, and protection. (CEP) 2.01.A	☒		
B. Equipment and/or materials, including drilling fluids, used in well construction NSF Standard 61 approved or equivalent. (IRPDWS 550.02) 1.01.E	☒		

V. GEOLOGIC SAMPLING

	Yes	No	NA
A. Sampling interval (e.g. every 5 feet or change in lithology), and methods identified. (RSWW 3.2.4.3.a) 3.03.C	☒		
B. Need for geophysical logs (i.e., resistivity, gamma, sonic, etc.)? (CEP) 3.04.A	☒	☐	☐
C. Collect and save samples? (CEP) 3.03.C	☒	☐	☐

VI. DRILLING

	Yes	No	NA
A. Separate specification sections for each type of acceptable drilling method. (CEP) 3.03.A	☒		
B. All "downhole" materials cleaned and disinfected with 500 ppm chlorine solution. (IDAPA 37.03.09.025.19) 3.10.C	☒		
C. ANSI/NSF 61 certified drilling mud product name(s) or specification. (IDAPA 37.03.09.025.18) (IRPDWS 550.02) 3.03.B	☒		
D. Record location and approximate volume of drilling mud losses. (CEP) 3.03.B	☒		

VII. CASING

		Yes	No	NA
A.	Thickness and weight for steel pipe must meet Recommended Standards for Water Works requirements (i.e., 8-inch casing must be at least 0.322 inches thick). (RSWW Table 1) 2.02.B; 2.02.C	☒		
B.	For steel casing, welding procedures and specifications. (CEP) 3.06.A	☒		☐
C.	For steel casing, welds penetrate full thickness of the casing wall. (IDAPA 37.03.09.025.02.a) 3.06.A	☒		☐
D.	Plastic well casing must be certified per ANSI/NSF Standards 14 and 61 and ASTM F480, and be approved for site specific use by DEQ and IDWR. The engineer must be present during placement of the casing and any packing material that is required to ensure structural stability. (RSWW 3.2.5.5)	☐		☒
E.	Instructions for removal of temporary casing (i.e., to prevent separation during extraction). (CEP) 2.02.B	☒		☐
F.	Depth of penetration of well casing into identified confining layer is clearly shown in the plans and specifications (CEP) 1.03.B. ***Final design depth of well casing will be specified by Engineer based on pilot hole geologic and geophysical log data.***	☒		☐
G.	If drive shoes are used to seal casing, describe method for testing shoe seal. (CEP)	☐		☒
H.	Plumbness and alignment test methods and allowable tolerance clearly stated in the specifications? (RSWW 3.2.4.2.b) 3.05.A	☒		
I.	Top of casing at least 18 inches above finished grade and/or 12 inches above well house floor, preferably higher. (IRPDWS 550.03.1.i) 3.06.B	☒		
J.	Finished grade at least 12 inches above natural ground level to provide slope away from well in all directions. (CEP) 3.06.B	☒		
K.	Permanent 1½ inch diameter casing vent (downturned, screened with #24 mesh, and terminating at least 18 inches above floor or ground) or equivalent vented well cap. (RSWW 3.2.7.6) 3.10.D	☒		

VIII. SEALS

A.	Depth, method of placement, and type of seal.			
1.	(Poured) or (pumped) (circle one that applies) 2.06 ***Either***			
2.	Placement of seal will be slow and continuous. (CEP) 3.07.F	☒		
3.	Volume and type of material will be recorded and checked against engineering specifications every 5 to 10 feet. (CEP) 3.07.B	☒		

4. Minimum 50% excess seal material will be on site. (CEP) 2.06.A

5. Temporary casing and/or tremie will be withdrawn as the seal is placed. (CEP) 3.07.F

B. Minimum requirements for annular seal thickness are specified in accordance with RSWW 3.2.5.9. 2.06.D; 3.02.A

C. Testing method for well seal is specified (regular tagging of top seal, volume calculations, bail down/fill up, other). (CEP) 3.07.B; 3.07.C

D. Consultant present and IDWR contacted prior to seal placement. (contact IDWR) 3.07.D

E. Intermediate seals to separate aquifers that are, or may be, contaminated or yield undesirable water. (RSWW 3.2.5.2.b)

F. Casing will be provided with sufficient guides welded to the casing to permit unobstructed flow and uniform thickness of grout. (RSWW 3.2.5.9.e) Placing guides at least every 60 feet is recommended. (CEP) 2.02.B

G. After cement grouting is applied, work on the well shall be discontinued until the cement or concrete grout has properly set. (RSWW 3.2.5.9.d.6) 3.07.E

☒		
☒	☐	
☒		
☒		
☒		
☐		☒
☒		
☒		☐

IX. *SCREENS AND PERFORATED CASINGS*

A. 304, 304L, 306, or 306L (ANSI/NSF Standard 61 certified stainless steel, or other material resistant to damage by chemical action of groundwater or cleaning operations as approved by the Department. (RSWW 3.2.5.8.a) 2.03.A

B. The specifications describe minimum construction requirements and/or acceptable brands. (CEP) 2.03.A

C. Screen will be designed based on the results of sieve analyses. (IRPDWS 550.03.e.iii.(3)) 1.03.B ***Engineer will specify final design based on inspection of samples and will conduct sieve analyses as needed.***

D. Screen diameter and placement detail is included, including blank casing and bottom plate or wash down bottom fitting of the same material as the screen. and minimum use of drilling muds). (RSWW 3.2.5.8.f) Figure 1

E. The screen will be centered in the annular space. (CEP) 3.06.C

Yes	No	NA
☒		☐
☒		☐
☒		☐
☒		☐
☒		☐

X. *FILTER PACK* ***(Note: All screens and perforated sections shall be filter packed unless otherwise authorized by DEQ/IDWR)***

A. Material description and physical properties and disinfection requirements are specified in accordance with RSWW 3.2.6.2.a. 2.04.A; 3.06.D

B. Make & model of screen seal or packer (to protect against leakage of grout into the gravel pack or screen) is shown on the plans and described in the specifications. (RSWW 3.2.6.2.e) 2.04.A; Figure 1

☒	
☒	

C. Filter pack designed from aquifer formation sieve analysis evaluated by engineer or geologist (and screen manufacturer if requested). (IRPDWS 550.03.e.iii.(3)) 1.03.B; 2.04.A — ☒

D. Details of filter pack placement requirements are specified in accordance with RSWW 3.2.6.2. 2.04.A; 2.04.D — ☒

E. Details of filter pack including tagging, volume checks, and extension above and below screen (typically 3 feet) are specified. (CEP) 2.04.A; 2.04.D — ☒

XI. *WELL DEVELOPMENT*

A. Development method, equipment, and duration are specified in accordance with RSWW 3.2.5.11. 3.08 — ☒

B. Passing criteria is specified in accordance with RSWW 3.2.5.11. 3.08.C — ☒

C. The specifications require final cleaning of sump. (CEP) 3.08.D — ☒

D. A preliminary production test is recommended, especially for air-rotary rigs. (CEP) 3.08.C — ☒ / ☐

XII. *FINAL PRODUCTION TESTS*

A. Engineer or geologist (or a representative of the engineer or geologist) present during testing. (CEP) 3.09 — ☒

B. The pump rate and duration are specified as: — ☒

☐. The well will be test pumped at the design capacity for at least 24 consecutive hours after drawdown has stabilized.

Or

☒ The well will be test pumped at 150% of the design capacity for at least 6 consecutive hours after drawdown has stabilized. 3.09.A

In either case, if the drawdown does not stabilize, the pumping will continue for at least 72 consecutive hours. (IRPDWS 550.03.f.i)

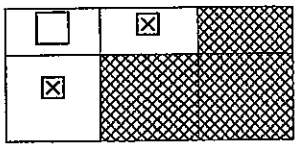
C. The specifications call for the data listed in IRPDWS 550.03.f.iii to be recorded and provided to DEQ. 3.09.B; 3.09.C — ☒

D. If the well is located in a low yield aquifer, an additional 3-day test at average ultimate use may be required - contact DEQ. — ☒

	Yes	No	NA
E. Bacterial and chemical water quality testing as required for new sources. Contact DEQ for the specific monitoring requirements for different types of public water systems. 3.09.C	☒		
F. Final disinfection and flushing to remove all chlorine are specified in accordance with RSWW 3.2.5.12. (Also see Item XIV.A) 3.10.D	☒		
G. TV inspection is specified. (Recommended for all wells, particularly with			

large wells or where problems are anticipated). (CEP)

H. Measurement for sand content (must be < 5 ppm) either by laboratory or as specified in IRPDWS 550.03.f.ii. 3.08.C; 3.09.C

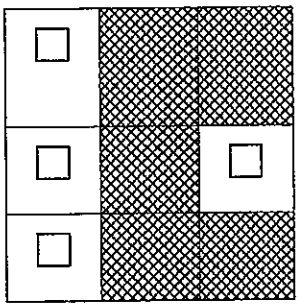


XIII. PITLESS ADAPTERS N/A

A. Pitless adapter approved by NSF, Water Systems Council, or equivalent. Make and model are shown in the plans and specifications. (IRPDWS 550.03.m.vi.(1))

B. Field tested per Manual of Individual Water Supply Systems, except for welded on units. (IRPDWS 550.03.m.vi.(3))

C. Replacement of upper casing annular seal to the original specifications. (CEP)



XIV. SITE CONTROL

A. Construction wastewater and storm water disposal methods are specified. (If discharged to surface water or canals, proper authorizations obtained) (CEP) 1.08.B

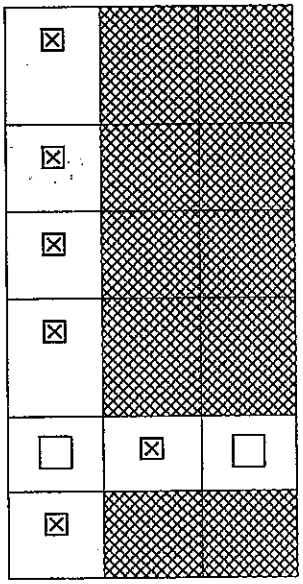
B. Runoff shall not contain sediment unless erosion control measures, approved by DEQ, are in place. (CEP) 1.08.B

C. Water leaving the site does not contain drilling fluid additives, drill foam or sealant material. (CEP) 1.08.E

D. Well construction waste and/or debris, including drilling fluid waste, disposed of at a sanitary landfill or other site approved by the engineer. (CEP) 1.08.E

E. Dust and noise control recommended. (CEP)

F. Holes, pits, equipment, and chemicals safety stored and fenced per OSHA standards. (CEP) 1.08.D



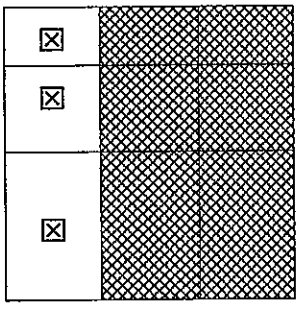
XV. PROJECT COMPLETION

Yes No NA

A. Site cleanup requirements are specified. (CEP) 3.11.A

B. Adequate temporary cover or cap per IDWR requirements. (IDAPA 37.03.09.025.02.a) 3.10.D

C. Submit data and reports to engineer, DEQ, and IDWR. This shall include the well log, production pump specifications and pumping curves, pumping test results, and results of new source monitoring tests. (IRPDWS 550.03.e) 1.03.B; 3.03.F; 3.09.B; 3.09.C

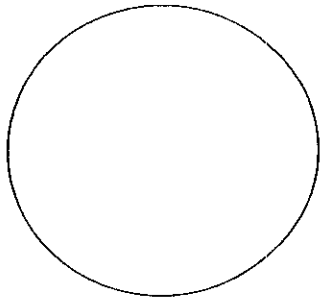


Note: **This checklist addresses the majority of common items from the Idaho Rules for Public Drinking Water Systems (IRPDWS), the Recommended Standards for Water Works (RSWW), and common engineering practices. However, this checklist is not all-inclusive and users are expected to fully understand the rules and standards, apply them where necessary, and request interpretations from DEQ if there are any questions. DEQ regional offices may have additional written information that will assist in the design/approval process.**

All of the items indicated on the above checklist are accurately reflected in the attached Plans and Specifications.

Design Engineer's Signature: Jennifer Sukow Date: 1/18/2006

P.E. Stamp:



Checklist References:

1. *Idaho Rules for Public Drinking Water Systems (IRPDWS)*
2. *Well Construction Standards Rules (IDAPA 37.03.09)*
3. *Recommended Standards for Water Works (RSWW) dated 2003.*
4. *Johnson, Groundwater and Wells*
5. *AWWA Standards*
6. *Manual of Individual Water Supply Systems*

APPENDIX H

WELL CONSTRUCTION SPECIFICATIONS

TECHNICAL SPECIFICATIONS
CITY OF EAGLE WELL NO. 4

PART 1 - GENERAL

1.01 THE REQUIREMENT

A. The Contractor shall furnish all materials, labor, plant, equipment, tools, supplies, transportation, and appurtenances for drilling, casing, developing, completing, and testing of one water well for Eaglefield, LLC (the Owner) as specified herein and in accordance with the requirements of the Contract Documents.

B. Approximate depths of drilling and lengths of well casings and liners are to be used for the purpose of price estimation only. Exact depths and lengths may be adjusted by the Owner depending on subsurface conditions.

C. Work requirements for each well are summarized below. Each item is discussed in subsequent sections of the Specifications.

(1) Mobilize to and demobilize from the work site
(2) Drill a minimum 8-inch diameter exploration borehole to approximately 450 feet for geophysical logging purposes
(3) Conduct geophysical logging
(4) Ream upper exploration borehole to minimum 24-inch diameter
(5) Ream lower exploration borehole to minimum 18-inch diameter.
(6) Furnish and install 16-inch O.D. casing (0.375-inch wall thickness), 16-inch x 12-inch reducer, 12-inch blank casing (0.375-inch wall thickness) and 12-inch stainless well screen as directed.
(7) Furnish and install Colorado Silica sand filter pack from approximately 300 to 450 feet
(8) Install surface seal from approximately 300 feet to ground surface.
(9) Develop the well.
(10) Furnish, install, operate, and remove test pump.
(11) Disinfect well.

D. All well construction work not specifically addressed in these specifications shall conform to IDAPA 58.01.08 Idaho Rules for Public Drinking Water Systems (Idaho Department of Environmental Quality), IDAPA 37.03.09 Minimum Well Construction Standards (Idaho Department of Water Resources), appropriate sections of "Recommended Standards for Water Works", and AWWA A100 - Standards for Water Wells.

E. All materials used for well construction, including drilling fluids, shall be NSF Standard 61 or equivalent.

1.02 BEGINNING AND COMPLETION OF WORK

A. The work shall begin within 45 calendar days of receipt of notice to proceed from the Owner. All work shall be completed within 90 calendar days of receipt of notice to proceed.

1.03 SERVICES FURNISHED BY THE OWNER

A. The Owner will provide land and rights-of-way for the Work specified in this contract. Provisions for access to the Work site will be provided by the Owner. The Contractor shall not enter upon or occupy with laborers, tools, equipment, or material any ground outside the property and rights-of-way provided by the Owner unless stated otherwise by the Owner. Other contractors, employees, or agents of the Owner may enter the work site and premises used by the Contractor for business purposes.

B. The Engineer (as the Owner's Representative) will participate in well testing, evaluation of drilling characteristics, sample examination, and geologic log interpretation, and will advise the Contractor on the final design placement of well casing, surface seal, gravel pack and well screen. The Engineer shall be present during placement of well seals and for test pumping.

C. The Owner will obtain the drilling permit.

1.04 WORK SITE

A. The well site is owned by REC, LLC and is located in the NW ¼ of the SE ¼ of Section 11, T04N R01W, near Eagle, Idaho. The well site is reached by turning north off Highway 44 approximately 1/4 mile west of Linder Road, and traveling northwest approximately ½ mile south on unimproved dirt access roads. The well site will be staked by the Engineer prior to Contractor mobilization.

1.05 DRILLING CONDITIONS

A. It is anticipated that drilling will be in clay, silt, sand, and gravel. Static groundwater level is anticipated to be between 5 and 30 feet above ground surface. It is the Contractor's responsibility to make his own determination of subsurface conditions.

B. The Contractor shall be responsible for providing notification to utility owners prior to beginning Work, by requesting a facility locate through Dig Line, Inc. at 1-800-342-1585.

C. It is the Contractor's responsibility to become informed about local conditions affecting this Work. Neither the information contained in these specifications, nor gleaned from the Owner, or their agents, shall act to relieve the Contractor from any responsibility set forth in the contract.

1.06 CONTRACTOR QUALIFICATION AND EQUIPMENT

A. The Contractor shall have at least five years of well drilling experience.

B. The Contractor shall submit a list of equipment to be used on the project. The list shall include: (1) manufacturer; (2) load capacities; (3) year of manufacture; and (4) year of purchase by current owner. The Contractor is responsible for providing equipment capable of performing the Work specified.

C. Damages to the well or surrounding property by the Contractor's equipment, leased or otherwise, shall be repaired or replaced at the Contractor's expense.

1.07 CONTRACT DOCUMENTS

A. The form and detail of the various features of the Work are illustrated on the following drawings accompanying and made part of the Contract Documents:

- Figure 1 – Eagle Test Well No. 4 Conceptual Design
- Figure 2 – Eagle Test Well No. 4 Site Location Map

1.08 WATER, POWER, AND SITE IMPROVEMENTS

A. Water required for drilling purposes may be obtained from locations designated by the Owner. If the Contractor wishes to obtain water from other sources, he shall obtain prior approval from the Owner and must provide for the quantity and quality of water required at his own expense. Costs for pumps, water conveyance facilities, or transportation to the Work site shall be borne by the Contractor including all necessary pumps, piping and components. All water used for well construction purposes shall be of potable quality and adequately disinfected to prevent the spread of bacteria.

B. The Contractor shall provide, at his own expense, all necessary piping and components to transfer the discharged well water from the drill site to a suitable disposal site. A plan for water disposal must be provided by the Contractor and approved by the Owner prior to commencing drilling. Water leaving the site shall not contain drilling fluid additives, drill foam, or sealant material.

C. The Contractor shall provide, at his own expense, all power required for his operations under the contract.

D. Preparation of the drill site and excavation or backfilling of mud pits, ditches, or settling ponds shall be the responsibility of the Contractor. The Contractor shall be responsible for protecting life and property from excavated mud pits and settling ponds and shall backfill pits as soon as drilling and testing operations are complete. Holes, pits, equipment, and chemicals shall be safely stored and fenced per OSHA standards. All materials shall be stored where safe from damage or contamination.

E. The Contractor shall dispose of all well construction waste and/or debris, including drilling fluid waste, at a sanitary landfill or other site approved by the Engineer.

1.09 WORKING HOURS

A. The Contractor shall work on this project in a steady and diligent manner. The Contractor shall, during all work periods, provide an adequate crew of suitably qualified personnel to prevent unnecessary delays in project completion. The Contractor may be required to provide 24-hour per day maintenance of pumping and monitoring equipment during test pumping.

1.10 FINAL CLEANUP

A. The Contractor shall thoroughly clean the site after completion of the drilling, well construction, and test pumping operations. All excess drilling fluids, debris, and other materials used during these operations shall be removed and properly disposed of by the Contractor. Backfilled mud pits shall be compacted to 90 percent maximum dry density as determined by Standard Proctor Test (ASTM 698-00).

B. The Contractor shall promptly remove his equipment, temporary facilities, and materials, and leave the site in a condition approved by the Owner. The Contractor shall repair any damage to the property or facilities caused by his operations prior to final acceptance of the Work by the Owner.

PART 2 - PRODUCTS

2.01 HANDLING AND STORAGE

A. Casing, well screen, and other material shall at all times be handled with care to avoid damage. The Contractor's methods of loading, transporting, and unloading pipe shall conform to the recommendations of the manufacturer. Whether moved by hand, skidways, or hoists, material shall not be dropped or bumped. The interior and machined ends of the pipe and well screens shall be kept free from all dirt and foreign matter at all times. Pipe and well screen shall be handled in such a manner as to avoid damage to the machined ends and screens. Damaged material that cannot be repaired to the Engineer's satisfaction shall be replaced at the Contractor's expense. When storing is necessary, pipe shall be stored off the ground in a flat area with the ends resting on plain timbers.

2.02 CASING

A. **Temporary Surface Casing:** Temporary surface casing may be used at the Contractor's option. If utilized, temporary surface casing shall be removed during installation of the surface seal.

B. **Well Casing:** The completed well shall be cased with nominal 16-inch O.D. casing from 4 feet above natural ground surface to a depth designated by the Engineer. The casing shall be new steel ASTM A-53 or equal with a minimum wall thickness of 0.375 inches. The casing shall be equipped with centralizers at a spacing of no more than 60 feet.

C. **Blank Casing:** The completed well shall be equipped with nominal 12-inch I.D. casing within the well screen assembly. The casing shall be new steel ASTM A-53 or equal with a minimum wall thickness of 0.375 inches. The casing shall be equipped with centralizers at a spacing of no more than 60 feet.

2.03 WELL SCREEN

A. Well screen shall be of the V-slot continuous wire-wound type in 304 stainless steel of 12-inch pipe size. The top of the well screen shall be equipped with welding ring. The bottom of the well screen shall be equipped with a stainless steel plate bottom or a welding ring for connection to tail pipe. In order to provide adequate collapse, column, and tensile strengths, the screen construction shall include sufficient wire and rod sizes to be compatible with the depth and pressures of the installation, as recommended by the screen manufacturer.

2.04 SAND FILTER PACK

A. A sand filter pack shall be placed around the well screen assembly. The filter pack shall be installed opposite the entire length of the screen assembly, and shall extend above the top screen a minimum of 40 feet (unless otherwise directed by the Owner). The pack shall consist of clean, well-rounded siliceous material with a uniformity coefficient of 2.5 or less, manufactured by Colorado Silica Sand, Inc., Colorado Springs, CO (or approved equal), and

conforming to one of the following gradation specifications to be determined following analysis of drill cuttings.

10-20 Filter Sand	8-12 Filter Sand
90-100% passing No.10 sieve	90-100% passing No. 8 sieve
90-100% retained on No. 20 sieve	90-100% retained on No. 12 sieve

6-9 Filter Sand
90-100% passing No.6 sieve
90-100% retained on No. 9 sieve

2.05 REDUCER

A. The 12-inch screen and blank casing assembly shall be connected to the 16-inch casing using a welded 16-inch x 12-inch reducer.

2.06 WELL SEAL

A. The annulus above approximately 300 feet will be sealed with neat cement, bentonite chips, or an approved bentonite grout. A 50 percent excess volume of seal material shall be available on site if neat cement or bentonite grout is used as seal material.

B. Where cement grout is used, additives shall be utilized to control fluid losses and shrinkage. Mix water quality and quantity shall follow manufacturer specifications paying close attention to cement grind and water ratios, eliminating free water. The use of bentonite to reduce hydraulic conductivity shall not exceed 4 percent and bentonite shall be pre-hydrated prior to mixing with the neat cement. Silica flour or 200-mesh silica sand may be used in a ratio of 30 to 50 percent to reduce permeability and increase the stability of the grout. Sodium chloride may be used to reduce fluid loss and shrinkage, but retarding and acceleration properties shall be taken into account with mixing ratios.

C. If an annular seal of bentonite grout is to be utilized, a high (greater than 30 percent) solids bentonite shall be pumped from the bottom up to the land surface. The bentonite shall contain no chemical polymers which effect long-term stability of the seal and are often found in drilling fluid grade bentonites, but rather shall be specifically recommended by the manufacturer for use as a seal material in water wells.

D. Bentonite chips used for the annular seal shall be specifically recommended by the manufacturer for use as a seal material in water wells. Bentonite chips may be used below the water table if there is an annular space of 4 inches or more.

PART 3 - EXECUTION

3.01 MOBILIZATION AND DEMOBILIZATION

A. Upon receiving the Notice to Proceed, the Contractor shall move in all tools, equipment, and supplies necessary for the Work, and upon completion of the Work, shall remove all such items from the premises promptly and leave the site in a clean and orderly fashion.

3.02 CONSTRUCTION SEQUENCE

A. The sequence of construction for this project shall consist of the following:

1. Mobilization.
2. Drill a minimum 8-inch diameter exploration borehole to approximately 450 feet
3. Conduct geophysical logging.
4. Ream exploration borehole to minimum 24-inch diameter for 16-inch casing, and minimum 18-inch diameter below the 16-inch casing
5. Install 16-inch casing, reducer, 12-inch casing and 12-inch well screen
6. Install sand filter pack
7. Install surface seal and withdraw any temporary casing
8. Develop the well.
9. Furnish, install, and operate test pump.
10. Disinfect the well with chlorine solution.
11. Demobilize.

3.03 DRILLING

A. The drilling method below the surface casing shall be reverse rotary or mud-rotary. The borehole shall be of sufficient diameter to meet Idaho Well Construction Standards for sealing of casing.

B. Drilling fluid properties shall be maintained in such a manner to ensure the structural integrity of the borehole and to circulate drill cuttings representative of the strata penetrated to the ground surface. Drilling fluid additives shall be NSF approved.

C. The Contractor shall sample the drill cuttings at 5-foot intervals and at pronounced changes in geologic formation. These samples shall be saved and maintained on the job site in a clean dry area. All samples are to be submitted to the Owner. The samples shall be of at least one-pint size, shall be kept in cloth sample bags or zip-lock style plastic bags, to be provided by the Contractor, and shall be clearly labeled to show the depth and well from which collected.

D. The Contractor shall maintain a daily drilling log of the well. Information that shall be listed on the drilling log includes: (1) drilling fluids and additives, including quantity of materials used; (2) drilling fluid properties, including weight and viscosity (if applicable); (3) type and diameter of bits used for drilling and total footage for each bit; and (4) any remarks or comments concerning the drilling characteristics of the borehole, including locations of any lost circulation zones. The forms shall be kept on-site for inspection by the Owner.

E. All drilling fluids shall be disposed of in accordance with State and Federal regulations. Method and place of drilling fluid disposal shall be approved by the Owner. Costs incurred in connection with the disposal of drilling fluids and developed water shall be borne by the Contractor.

F. Logs and records shall be kept by the Contractor's drillers on forms suitable to the Owner, which shall indicate each shift worked; the general character, thickness, and type of material penetrated; and the type of all other Work performed, including the exact time spent on each item of Work. The logs and records shall be maintained at the time the Work is done. Copies of the logs shall be available for inspection by the Owner at all times. Copies of all logs shall be furnished to the Owner following completion of all operations. The Contractor shall submit a Well Driller's Report to the Idaho Department of Water Resources.

3.04 GEOPHYSICAL LOGGING

A. Geophysical logging shall be conducted upon completion of exploration borehole drilling. The Engineer shall be given at least 24 hours notice of the time when the survey will be run in order to witness the performance of the survey. The logs run shall include normal resistivity and natural gamma radiation.

3.05 PLUMBNESS AND ALIGNMENT

A. The Contractor shall construct the well sufficiently straight and plumb to permit free installation and removal of a nominal 14-inch test or production pump. The hole shall be drilled to the depth designated by the Owner with a total deviation of the casing not to exceed one degree per 100 feet of the well. The alignment will be considered satisfactory if the casing will permit the free lowering and raising of a dummy between land surface and the bottom of the 16-inch casing section. The dummy shall be constructed of a 40-foot length of standard 14-inch O.D. pipe. It shall be the responsibility of the Contractor to see that the well is being constructed straight and plumb within these limits at all times. Any indications of inadequate plumbness or alignment during drilling, casing, or pump setting operation shall be cause to require measurement of plumbness or alignment by a method approved the Owner. No payment shall be made for tests of alignment; any such tests shall be considered subsidiary to other items in this contract.

B. If the well has unacceptable plumbness or alignment, the Contractor shall undertake remedial measures. Any alignment work required by the Contractor in re-drilling or straightening the well shall be at his sole expense. If a well is deemed unacceptable following remedial measures, then as much casing as can be removed from the well shall be salvaged by the Contractor. Salvaged casing will be the property of the Contractor. The well shall be abandoned in accordance with Idaho State regulations at the Contractor's expense. All payments associated with construction of the abandoned well shall be credited to construction of a replacement well.

3.06 INSTALLATION OF WELL CASINGS, SCREEN, CENTRALIZERS, AND FILTER PACK

A. Individual lengths of steel casing shall be joined by welding and shall be performed by properly qualified operators following the manufacturer's recommendations. Welds shall penetrate the full thickness of the casing wall.

B. When complete, the well casing shall extend a minimum of 48 inches above natural ground level. Finished grade shall be at least 12-inches above natural ground level to provide slope away from the well in all directions. The top of well casing shall be flanged and equipped with a blind flange. A 10-inch diameter discharge pipe shall be welded to the side of the casing approximately 30-inches above natural ground surface. The pipe shall be equipped with a flanged butterfly valve.

C. Centralizers shall be installed at intervals of no more than 60 feet.

D. Sand filter pack shall be installed by pouring from the surface. The pack shall be disinfected with chlorine prior to installation. The level of the pack shall be tagged at frequent intervals to confirm that it is not bridging. Following installation, the pack shall be settled by swabbing or other means.

3.07 WELL SEAL

A. The annular seal shall extend from approximately 300 feet to ground surface, as determined by the Engineer.

B. If bentonite chips are used as a seal material, the top of the seal shall be tagged at nominal 10-foot intervals during placement to determine if the seal is reaching its intended position. Pour rates shall not exceed manufacturer's recommended rates. Seal level shall be checked by tagging with a sinker bar or other means.

C. Volumes of seal material placed shall be carefully monitored and checked against calculated volume requirements.

D. The Engineer shall be notified a minimum of 24-hours prior to seal placement, and shall be present during seal placement.

E. Cement grouts shall cure for a minimum of 48-hours before work is resumed on the well.

F. Seals shall be installed in a slow and continuous manner, and temporary casing shall be withdrawn as the seal is placed.

3.08 DEVELOPMENT

A. The well shall be developed after installation of the casing, screen, and filter pack by swabbing and bailing, or by other methods approved by the Engineer.

B. If the well is developed by air-lifting, the Contractor shall have a compressor, tubing and eductor pipe to air-lift a minimum of 1,000 gallons per minute average flow from 200 feet depth. Sufficient tubing or drill stem shall be available to reach the total depth of the well. It is anticipated that air development will take place in a staged manner throughout the lower portion of the well, and thus may include considerable addition and subtraction of pipe.

C. Development shall be completed by pumping with the test pump prior to beginning the pump test. Development pumping shall continue until discharged water is clear and sand free (less than 5 ppm sand), as measured by the Engineer.

D. Upon completion of the development, all material shall be thoroughly cleaned from the inside of the casing and screen.

3.09 TEST PUMPING

A. Following completion of development operations, the well shall be allowed to recover for 24 hours, or less if approved by the Owner, prior to starting the pumping tests. Anticipated methods of aquifer testing include: (1) a step-test lasting approximately 3 hours, which will consist of pumping the well at various rates from approximately 200 gallons per minute (gpm) to the maximum capability of the pump or well; and (2) a constant-rate pumping test lasting a minimum of 8 hours. The constant rate test may be extended if needed to verify sustainable well yield. Standby time will not be paid for the recovery periods between tests or at the conclusion of test pumping. The Engineer shall be present at the start of test pumping.

B. The test pump shall be capable of delivering 2,500 gallons per minute from a pumping level of 140 feet. The Contractor shall furnish and install all necessary equipment for testing,

including a discharge valve or throttle to control flow rate, orifices or flow meter for accurately measuring the discharge from the well, a nominal 1-inch pipe to the top of the pump to facilitate the installation and removal of electric-line water-level probes, and an air-line gage and compressed air source. The Contractor shall measure and record water level, pumping rate, and elapsed time as directed by the Engineer.

C. The Engineer shall be responsible for collecting water quality samples during the pumping test. The Engineer shall be responsible for determining whether (1) the well productivity is adequate to meet the project requirements and (2) water quality meets DEQ requirements.

D. The Contractor shall be responsible for providing power for the test pump. The Contractor shall provide a means for safe refueling during operations to prevent even brief shutdowns during the testing. Shutdowns before the end of the testing procedure in excess of ten (10) percent of the total time anticipated for this testing procedure may require the Contractor to allow the water level to recover to pre-pumping conditions and re-start the test, as determined by the Engineer.

3.10 PROTECTION OF WATER QUALITY

A. All water used for drilling and development operations shall be of potable quality.

B. The Contractor shall take all necessary precautions to prevent contamination of the water in the well by the introduction of any foreign substance, including contaminated water, gasoline, oil, etc., and shall conform to all laws or regulations applicable to the protection of water quality. Facilities, equipment, and materials for disposing of the water produced during the development and testing of the well shall be provided by the Contractor. It is anticipated that clear water can be disposed of in the vicinity of the well site. Water leaving the well site shall be free of chemicals and seal materials. Water shall not be discharged to streams, ponds, or lakes without proper regulatory authorization.

C. All downhole materials (i.e., casing, pipe, pumps, sand filter pack, drilling tools, etc.) shall be disinfected with 500 ppm chlorine solution.

D. Upon completion of all well construction activities and removal of test pumping equipment, the Contractor shall disinfect the well using calcium hypochlorite. Sufficient calcium hypochlorite shall be added to give an average dose of 50 mg/l to the entire volume of water in the well, per ANSI/AWWA C654-03. All interior surfaces of the well above the static water level shall be wetted with calcium hypochlorite solution. The well shall be capped with a vented well cap or sanitary well seal following disinfection.

3.11 FINAL CLEANUP

A. After completion of all Work associated with this contract, the Contractor shall clean up the Work site and any property used by his operations to the satisfaction of the Owner. The Contractor shall remove and dispose of all excess materials resulting from his work, and shall repair, replace, or restore all property of any type or nature which has been moved, damaged, or altered in any way by his operations, to the satisfaction of the Owner. The Contractor shall return all landscape, roadway, and adjoining surfaces to their original condition and appearance as soon as reasonably feasible.

PART 4 - MEASUREMENT AND PAYMENT

4.01 SCOPE

A. The quantities of work or material stated in unit price items of the Bid are supplied only to give an indication of the general scope of the Work; the Owner does not expressly or by implication agree that the actual amount of work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any unit price item of the Work without a change in the unit price, and shall include the right to delete any Bid item in its entirety. Payment for materials and labor will be based on actual quantities furnished, installed, or constructed in accordance with the prices bid for unit price items.

B. The Owner may terminate Work on the project at any point if, in the Owner's judgment, the Owner's best interests are not served by continuation. Conditions which may lead to project termination include, but are not limited to, indications of low groundwater development potential as determined during drilling, geophysical logging, and testing. In such an event, the Contractor shall be paid for the value of Work completed at that time on the basis of the unit price and lump sum items listed on the Bid Schedule. In addition, if well construction is terminated by decision of the Owner, the Contractor may be required to properly abandon the well. Well abandonment procedures in excess of those explicitly required in these specifications must comply with current Idaho State regulations. Materials used in abandonment shall be paid at invoice cost plus 10 percent to cover handling. Payment for rig time shall be at the bid unit price.

C. No payment shall be made for tests of borehole plumbness and alignment; it shall be the responsibility of the Contractor to ensure that the hole remains within plumbness and alignment specifications.

D. No payment shall be made for drilling fluid materials used during normal drilling operations. All such costs shall be considered to be included in the unit prices listed on the Bid Schedule.

E. No payment shall be made for time or expenses incurred in the recovery or replacement of tools or equipment lost during the drilling phase or any other phase of the Work.

F. No payment shall be made for time, materials, or labor costs incurred during remedial measures or operations in the event the well is of unacceptable plumbness or alignment.

G. No payment shall be made for time, materials, or labor costs incurred in abandoning the well in the event the well is of unacceptable plumbness or alignment following remedial measures, or if lost tools or equipment cannot be recovered from the borehole. The costs incurred for construction of the abandoned well shall be applied to construction of a replacement well.

4.02 MOBILIZATION/DEMOBILIZATION (ITEM 1; LUMP SUM ITEM)

A. Measurement for payment for mobilization/demobilization to and from the work site will be based upon completion of the Work as a lump sum unit. The lump sum price listed on the Bid Schedule shall be full compensation for the moving in of rigs, pumps, equipment, power, labor, fuel, tools, and incidentals necessary to do the Work, and moving out of all such equipment, materials, tools, and incidentals, and well disinfection and final site cleanup upon completion of the Work. For purposes of partial payment, the mobilization portion of this bid item shall be considered as 60% of the total lump sum.

4.03 DRILL EXPLORATION BOREHOLE (ITEM 2; PRICES BASED ON LINEAR MEASUREMENT)

A. Measurement and payment for drilling the exploration borehole will be based upon the number of vertical linear footage drilled below ground surface in accordance with these Contract Documents. Payment for exploration drilling shall constitute full compensation for labor, fuel, bits, pipe, drive shoes, welding, drilling fluids, equipment, and incidentals necessary to drill the exploration borehole.

4.04 GEOPHYSICAL LOGGING (ITEM 3; LUMP SUM ITEM)

A. Measurement for payment for geophysical logging will be based upon completion of the entire work as a lump sum unit, in accordance with these contract documents. Payment for geophysical logging shall constitute full compensation for labor, equipment, and incidentals necessary to perform the logging.

B. No rig or standby time will paid to the Contractor during the time that a logging service is being brought to the site, or during the time that the logs are being run, or during a 24-hour period following completion of logging during which an exact determination of the final well design will be made by the Engineer.

4.05 REAM UPPER BOREHOLE (ITEM 4; PRICES BASED ON LINEAR MEASUREMENT)

A. Measurement and payment for the reaming of the borehole for 16-inch well casing will be based upon the number of vertical linear footage actually reamed in accordance with these Contract Documents. Payment for reaming the borehole shall constitute full compensation for temporary casing, miscellaneous materials, transportation, labor, fuel, bits, drilling fluids, equipment, and incidentals necessary to ream the borehole.

B. No payment shall be made for tests of borehole plumbness and alignment; it shall be the responsibility of the Contractor to ensure that the hole remains within plumbness and alignment specifications.

C. No payment shall be made for drilling fluid materials used during normal reaming operations. All such costs shall be considered to be included in the unit prices listed on the Bid Schedule.

D. Payment for drilling fluid materials used in regaining drilling fluid circulation in zones of lost circulation shall be paid at invoice cost plus 10 percent for handling.

E. No payment shall be made for time or expenses incurred in the recovery or replacement of tools or equipment lost during the reaming phase or any other phase of the Work.

F. No payment shall be made for time, materials, or labor costs incurred during remedial measures or operations in the event the well is of unacceptable plumbness or alignment.

G. No payment will be made for time, materials, or labor costs incurred in abandoning the well in the event the well is of unacceptable plumbness or alignment following remedial measures, or if lost tools or equipment cannot be recovered from the borehole. The costs incurred for construction of the abandoned well shall be applied to construction of a replacement well.

4.06 REAM LOWER BOREHOLE (ITEM 5; PRICES BASED ON LINEAR MEASUREMENT)

A. Measurement and payment for reaming the exploration borehole for the 12-inch well screen and 12-inch casing will be based upon the number of vertical linear footage of reaming conducted in accordance with these Contract Documents. Payment for reaming shall constitute full compensation for labor, fuel, bits, drilling fluids, equipment, and incidentals necessary to ream the borehole below the 16-inch casing.

4.07 FURNISH AND INSTALL 16-INCH WELL CASING (ITEM 6; PRICES BASED ON LINEAR MEASUREMENT)

A. Measurement for payment for the nominal 16-inch steel well casing will be based upon the number of linear feet of such pipe actually installed in the borehole in accordance with these Contract Documents. Payment for the 16-inch casing shall constitute full compensation for materials, transportation, labor, fuel, equipment, centralizers, welding materials, and incidentals necessary to furnish and install the well casing.

4.08 FURNISH AND INSTALL REDUCER (ITEM 7; PRICE BASED ON LUMP SUM)

A. Measurement and payment for furnishing and installing the reducer between the 16-inch and 12-inch casing strings shall be based upon completion of the entire Work as a lump sum unit, all in accordance with the requirements of these Contract Documents. Payment for the slip packer shall constitute full compensation for materials, transportation, labor, equipment, and incidentals necessary to furnish and install the packer.

4.09 FURNISH AND INSTALL 12-INCH BLANK CASING (ITEM 8; PRICES BASED ON LINEAR MEASUREMENT)

A. Measurement for payment for furnishing and installing the nominal 12-inch steel blank casing will be based upon the number of linear feet of such pipe actually installed in the borehole in accordance with these Contract Documents. Payment for the 12-inch casing shall constitute full compensation for materials, transportation, labor, fuel, equipment, centralizers, welding materials, and incidentals necessary to furnish and install the well casing.

4.10 FURNISH AND INSTALL 12-INCH WELL SCREEN (ITEM 9; PRICES BASED ON LINEAR MEASUREMENT)

A. Measurement and payment for furnishing and installing the well screen will be upon the number of linear feet of such well actually installed in the borehole in accordance with these Contract Documents. Payment for the well screen shall constitute full compensation for screen, weld rings, plate bottom, materials, transportation, labor, equipment, and incidentals necessary to furnish and install the well screen.

4.11 FURNISH AND INSTALL SAND FILTER PACK (ITEM 10; PRICES BASED ON CUBIC YARD MEASUREMENT)

A. Measurement and payment for furnishing and installing the sand filter pack will be based on the number of equivalent cubic yards of filter pack actually installed in the well in accordance with these Contract Documents. Payment for filter pack shall constitute full compensations for materials, transportation, labor, equipment, and incidentals necessary to furnish and install the filter pack.

4.12 FURNISH AND INSTALL ANNULAR WELL SEAL (ITEM 11; PRICES BASED ON CUBIC YARD MEASUREMENT)

A. Measurement and payment for furnishing and installing the well seal will be based upon linear feet of well seal installed in the borehole. Payment for the well seal shall constitute full compensation for bentonite, cement, materials, transportation, labor, equipment, and incidentals necessary to furnish and install the seal.

4.13 FURNISH AND INSTALL WELL HEAD EQUIPMENT (ITEM 12; PRICE BASED ON LUMP SUM)

A. Measurement and payment for furnishing and installing the side discharge, butterfly valve, and blind flange shall be based upon completion of the entire Work as a lump sum unit, all in accordance with the requirements of these Contract Documents. Payment for the side discharge, butterfly valve, and blind flange shall constitute full compensation for materials, transportation, labor, equipment, and incidentals necessary to furnish and install these items.

4.14 WELL DEVELOPMENT (ITEM 13; PRICES BASED UPON TIME, HOURS)

A. Measurement for payment for well development will be based on the actual number of hours of development operations. Payment will be made at the unit price listed in the Bid Schedule.

B. No payment shall be made for equipment acquisition, set-up, or installation, or for recovery periods required by the Owner to ensure thorough well development.

C. Payment for chemicals as may be required by the Owner to ensure thorough well development shall be reimbursed for the cost of the chemicals actually used at invoice cost plus 10 percent for handling.

4.15 FURNISH, INSTALL, AND REMOVE TEST PUMP AND RELATED EQUIPMENT (ITEM 14; PRICE BASED ON LUMP SUM)

A. Measurement and payment for furnishing, installing, and removing the test pump and related equipment will be based upon completion of the entire Work as a lump sum unit, all in accordance with the requirements of these Contract Documents. Payment for furnishing, installing, and removing will be at the price listed in the Bid Schedule, which price shall constitute full compensation for all work, including installation and removal of pump, motor, generator, cable, controls, valves, orifices, temporary piping, and associated appurtenances.

4.16 TEST PUMPING (ITEM 15; PRICES BASED UPON TIME, HOURS)

A. Measurement and payment for test pumping will be based on the actual number of hours of pumping operations. Payment for test pumping will be made at the unit price listed in the Bid Schedule, and shall constitute full compensation for all labor, fuel, equipment, and materials associated with operating the test pumping equipment.

B. No payment shall be made for standby time during the recovery periods between tests or for time spent transporting or maintaining equipment. All such costs for time and maintenance materials shall be included in the unit price listed in the Bid Schedule.

C. No payment shall be made for time, equipment, or materials used in a test aborted due to power failure or malfunction of pumping equipment.

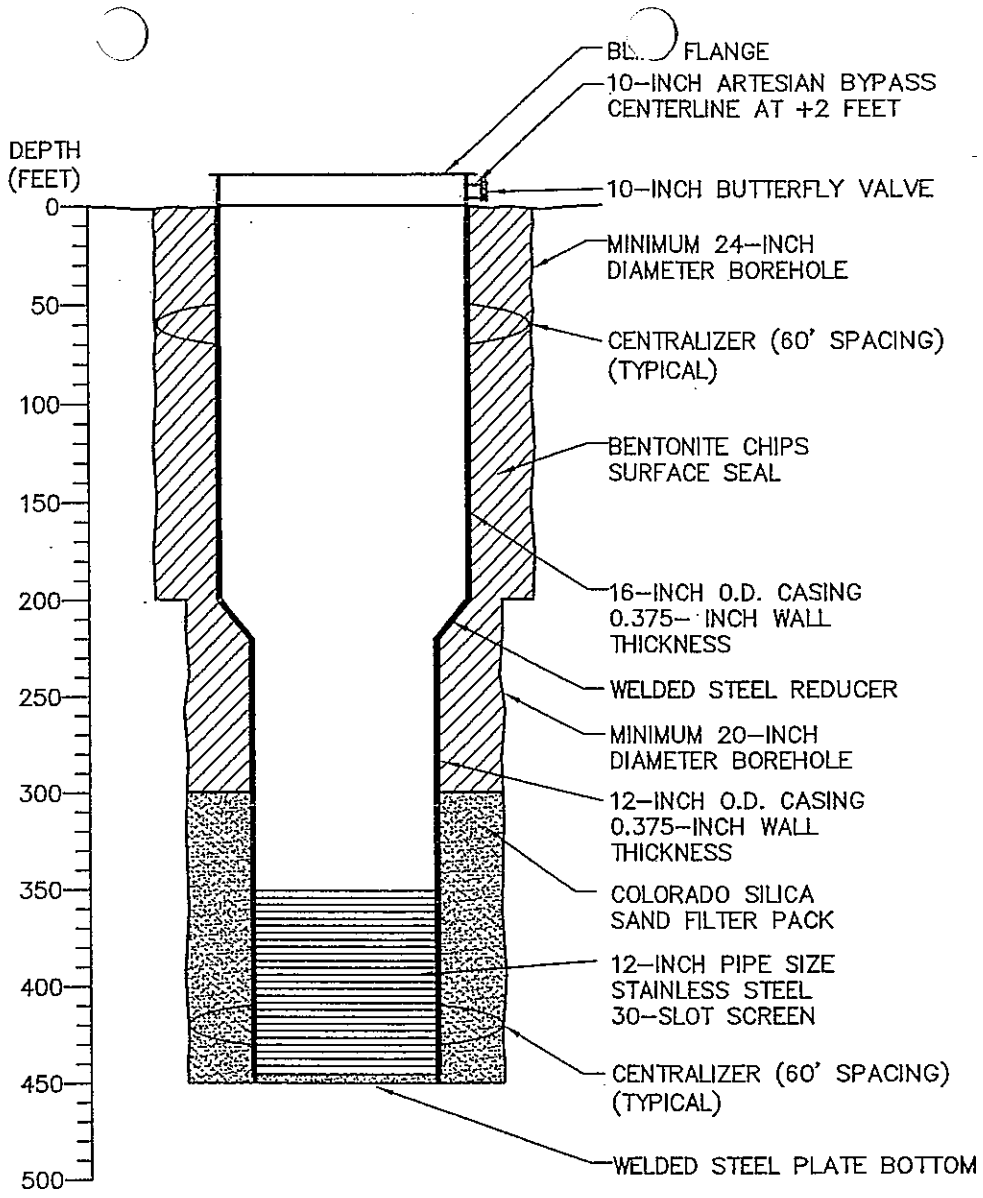
4.17 RIG TIME (ITEM 16; PRICES BASED UPON TIME, HOURS)

A. Measurement and payment for rig time will be based on the unit price listed on the Bid Schedule. Payment for rig time for additional work specifically directed by the Owner not otherwise covered in these Contract Documents will be based on the actual number of hours of work done and shall be full compensation for rig, fuel, labor, equipment, and materials normally associated with Contractor's drilling activities. Additional materials, which may be required by the Owner, shall be paid at the Contractor's invoice cost plus 10 percent for handling.

4.18 PLUGGING AND ABANDONMENT

A. In the event a well, successfully completed in accordance with these Contract Documents, requires plugging and abandonment, the cost for this work will either be negotiated with the Contractor or performed by others. The costs for plugging and abandonment of the well successfully completed in accordance with these Contract Documents shall not be considered as subsidiary to other bid items in the contract.

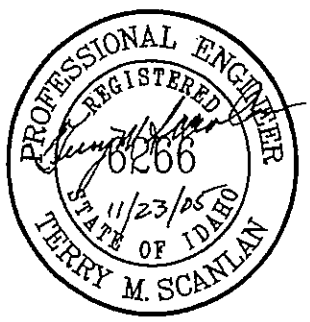
- END OF TECHNICAL SPECIFICATIONS -



NOTES:

1. ALL DEPTHS ARE APPROXIMATED FROM GROUND SURFACE, SCREEN AND SAND PACK MAY VERY PENDING DRILL RESULTS.

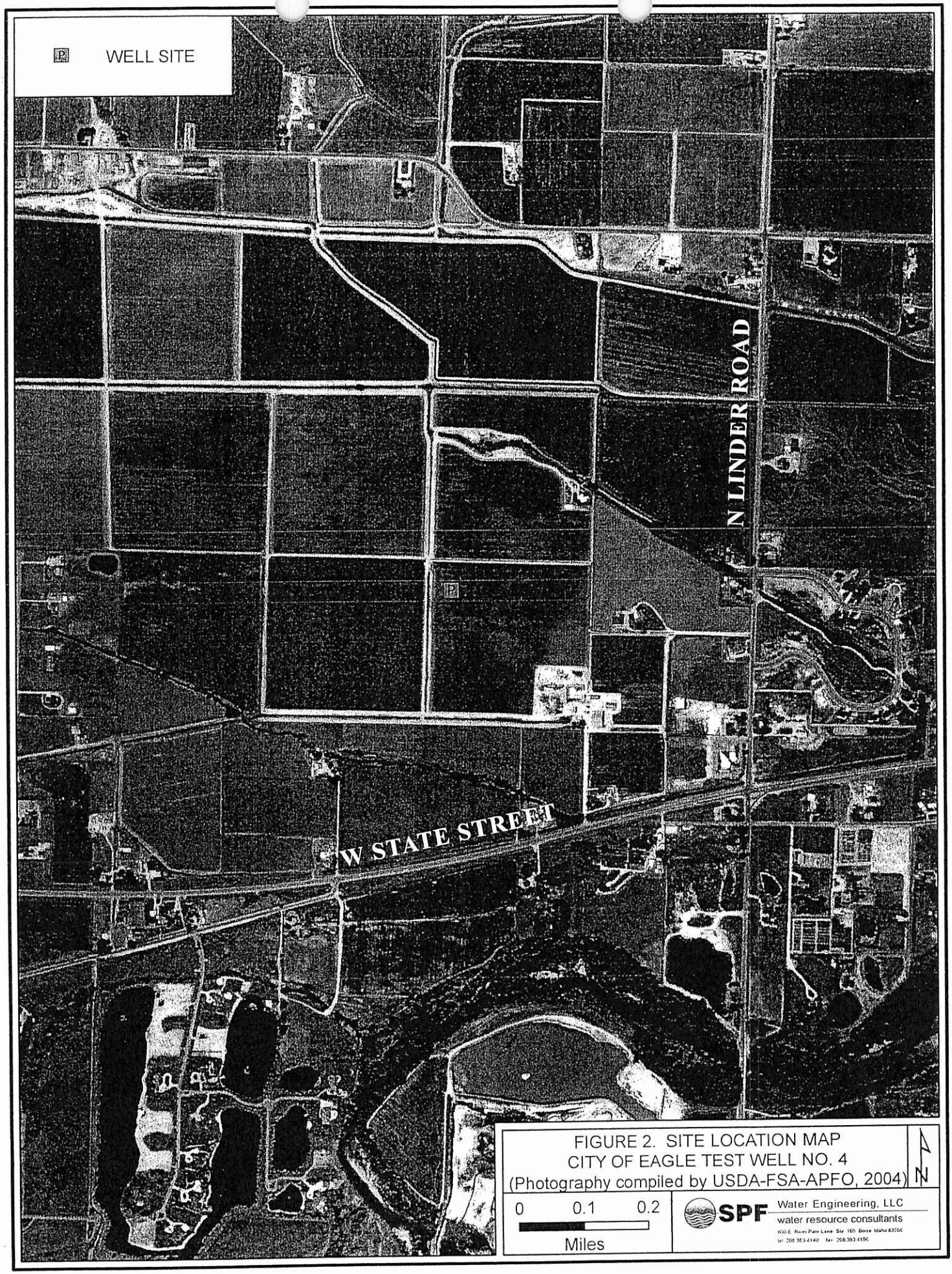
2. STATIC WATER LEVEL IS EXPECTED TO BE ARTESIAN WITH 0-10PSI PRESSURE.



SPF Water Engineering, LLC
water resource consultants
600 East River Park Lane, Suite 105, Boise, Idaho 83706
Tel (208) 383-4140 Fax (208) 383-4156

TEST WELL No. 4
CITY OF EAGLE, IDAHO

SCALE: NTS	FIGURE 1	PROJ. #421.0010
DRAWN BY: SDC		


WELL SITE
N LINDER ROAD
W STATE STREET
FIGURE 2. SITE LOCATION MAP
CITY OF EAGLE TEST WELL NO. 4
(Photography compiled by USDA-FSA-APFO, 2004)
N
0 0.1 0.2
Miles
SPF Water Engineering, LLC
water resource consultants

BID SCHEDULE OF ITEMS AND PRICES
CITY OF EAGLE, IDAHO, TEST WELL NO. 4

The Bidder proposes the following schedule of prices for drilling, construction, development, and testing of one public water system well for Eaglefield, LLC in accordance with the well specifications. The quantities of work or material stated in unit price items of the bid are supplied only to give an indication of the general scope of the work. Payment for materials and labor will be based on actual quantities furnished, installed, or constructed in accordance with the prices bid for unit price items. The bidder is solely responsible for completing all spaces below. The bidder is responsible for the inclusion of all overhead and profit costs within each item submitted.

Item	Description	Estimated Quantity	Unit	Unit Price	Total Amount
1	Mobilization and demobilization	1	lump sum	$_____	$_____
2	Drill minimum 8-inch diameter pilot borehole	450	linear foot	$_____	$_____
3	Geophysical logging	1	lump sum	$_____	$_____
4	Ream upper borehole for 16-inch casing	230	linear foot	$_____	$_____
5	Furnish and install 16-inch O.D. well casing	234	linear foot	$_____	$_____
6	Furnish and install annular well seal	20	cubic yard	$_____	$_____
7	Ream borehole below 16-inch well casing	220	linear foot	$_____	$_____
8	Furnish and install 12-inch I.D. blank casing	120	linear foot	$_____	$_____
9	Furnish and install 12-inch I.D. well screen	100	linear foot	$_____	$_____
10	Furnish and install sand filter pack	7	cubic yard	$_____	$_____

APPENDIX I

INSPECTION CONTRACT

SPF Water Engineering, LLC
water resource consultants

January 3, 2006

Mr. Peter Harris
Eaglefield, LLC
6951 Duncan Lane
Boise, ID 83714

Subject: Contract Proposal for Inspection Services – City of Eagle Test Well

Dear Peter:

SPF Water Engineering is pleased to provide the following contract proposal for inspection of the City of Eagle test well proposed for construction at Eaglefield Subdivision. The work will include inspection of construction activities as needed, including (1) evaluation of drill cuttings and geophysical log, (2) final design of well casing, screen, filter pack, and surface seal, (3) witnessing of surface seal installation, (4) supervision of test pumping and well development, (5) collection of water samples, and (6) certification of construction. The well will be constructed to public water system standards for future use in a municipal water system.

SPF proposes to conduct this work on a time and materials basis. We anticipate that costs for inspection will range from $3,000 to $5,000. If this proposal meets with your approval, it may serve as the basis for agreement by affixing a signature in the space provided below. Please return one signed original to my office.

Respectfully submitted,

SPF Water Engineering, LLC

By _____
Terry M. Scanlan, P.E., P.G.

Accepted by:

Eaglefield, LLC

By _____

Title Managing Member

Date 1-5-06